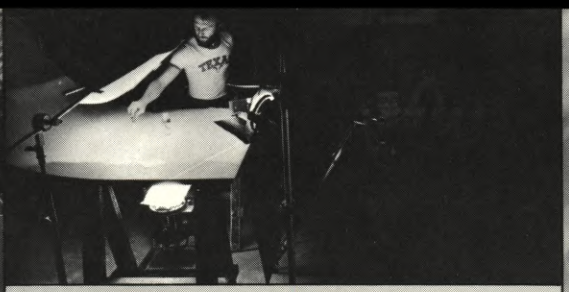
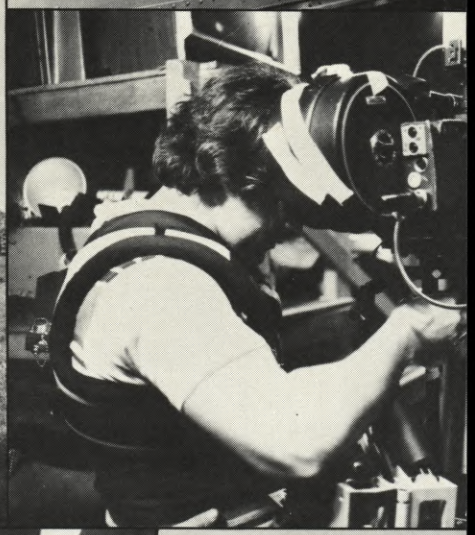
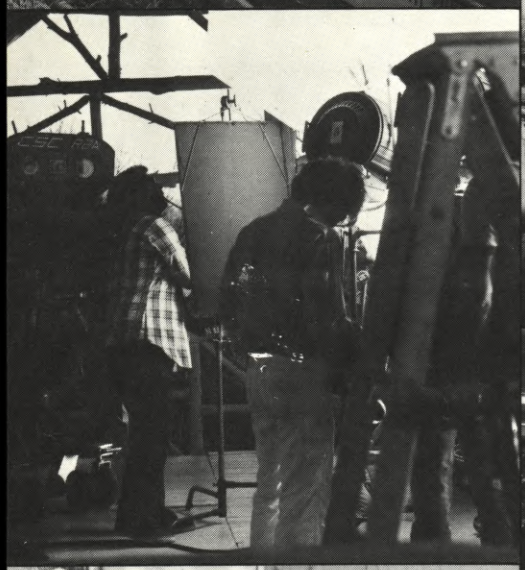
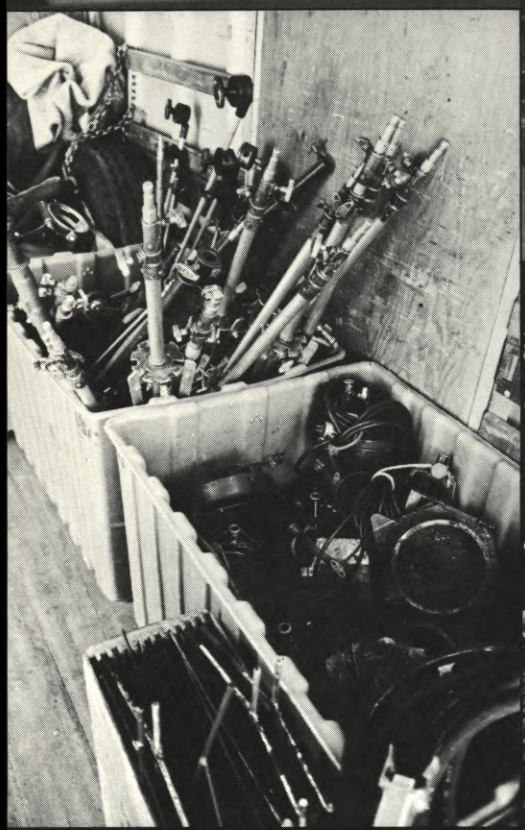
American Cinematographer
International Journal of Motion Picture Photography and Production Techniques
AUGUST 1978/$1.50

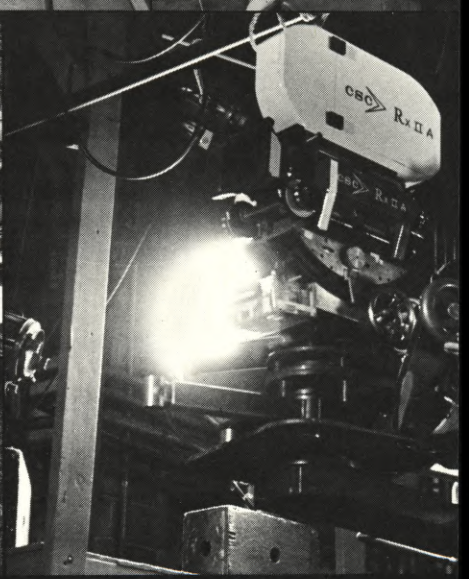
...AND HOW IT WAS FILMED











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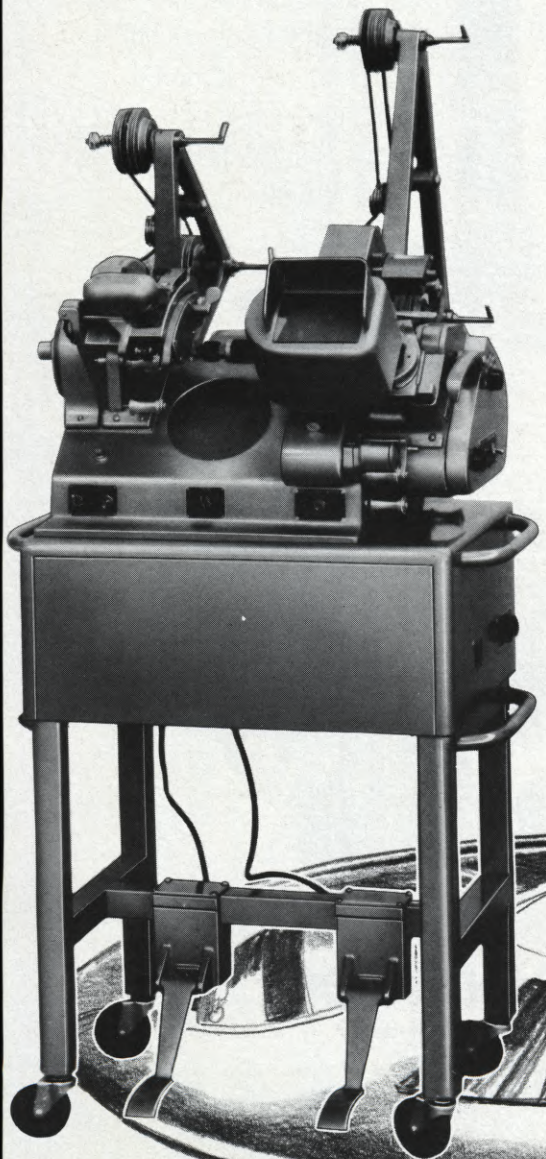

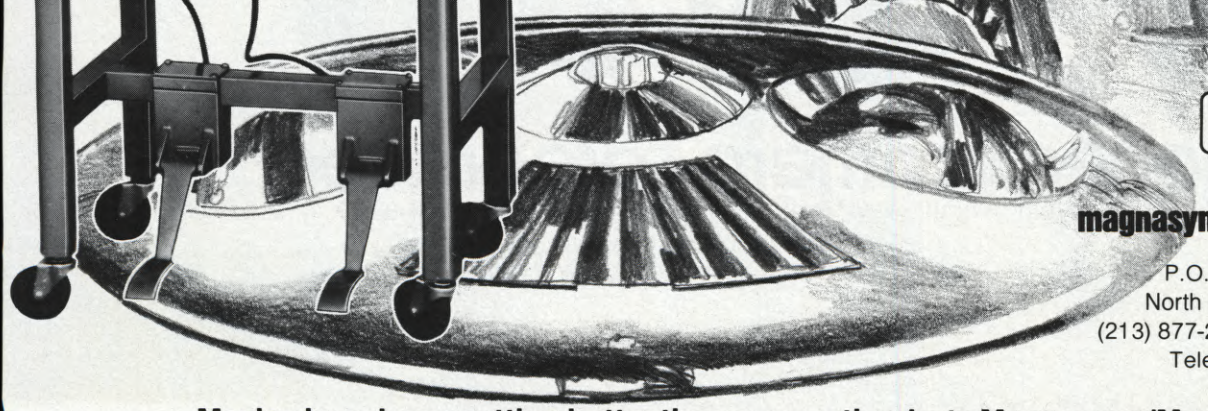

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International Journal of Motion Picture Photography and Production Techniques

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AUGUST 1978

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ON THE COVER: Renderings of Olivia Newton-John and John Travolta, as they appear in the new film version of the long-running Broadway hit musical, "GREASE", a Robert Stigwood/Allan Carr Production for Paramount release, directed by Randal Kleiser and photographed by Bill Butler, ASC.

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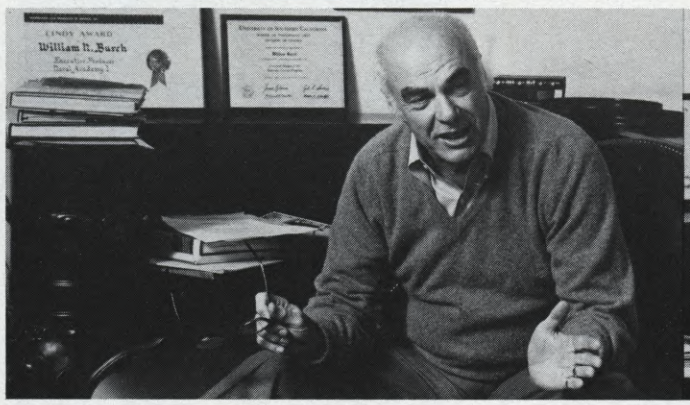

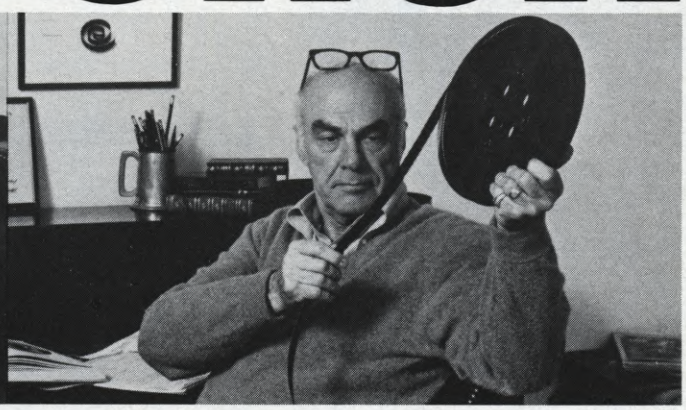

"I sell ideas..."

The same people who kept you on the edge of your seat with "Jaws," "Airport," and "The Sting" have now created a similar sensation with a dramatic story from the middle of the North Sea. This is happening because William N. Burch, president of the Universal Commercial Industrial Films Division of MCA, believes that the term "industrial" filmmaking is no longer an adequate description of his work.

Concepts on Film

" 'Industrial' films can now be termed 'informational,' " insists Bill, a respected pioneer in the world of corporate image films. Leading Fortune 500 companies such as IBM, General Motors, Ford, Phillips, Coca-Cola, Sears, Bethlehem Steel, Eli Lilly, RCA, etc., often present their corporate ideas and ideals to Bill requesting him to create concepts that train, recruit, or simply impart knowledge. "I don't necessarily sell film; I sell ideas," Bill explains. With these award-winning ideas, Bill has achieved an enviable standard in the industrial filmmaking marketplace.

Action Imagery

"U.S. Art, A Gift of Ourselves," produced for Sears Roebuck Foundation, received international acclaim for its innovative use of kinestasis animation. This engaging film traced a full 200 years of fine arts development in American music, sculpture, painting, movies, television, etc. Nineteen thousand arts-oriented images were compressed into a mere half-hour film that explodes visually on the screen. Another exciting UCIF production, "Ekofisk, City at Sea," challenged an entire crew to tolerate the inherent dangers of filming in the middle of the North Sea in order to capture on film and communicate the harsh realities of oceanic oil exploration.

Tape or Film

"Once the idea is sold, the customer tells us whether he wants the job on film or on tape. Usually, the client will go to film because there is a far wider acceptance of film...personally, I prefer film.

"Tape is great for some shoots, however, taking a mobile unit out and expecting it to work immediately just doesn't happen that often. Film gives us a choice of shots and the opportunity to look and look again in post-production at the effectiveness of a particular scene.

"It all begins for us on Eastman color negative II film 7247...regardless of how it ends up: ½-inch, ¾-inch, 1-inch or 2-inch tape; 8 mm, 16 mm, 35 mm, videodisc... We're fully confident we're going to get a beautiful image out of it. It takes so much of the gamble out of filmmaking.

Opportunities

"Cinema students are always anxious for suggestions on how to break into the Hollywood marketplace. A glimpse at Bruce Green's work, a USC cinema school graduate and now UCIF's multitalented director, demonstrates the tremendous potential and satisfaction that can be derived from excelling in this informational filmmaking area. Whether this challenge is accepted from a production company or from a corporation with in-house capability, there are numerous opportunities that will help launch a promising career for any willing student.

"Films that truly motivate have become a necessity rather than a luxury," says Bill Burch. "To repeatedly achieve the client's objective and to continually work toward greater creative heights gives me a unique personal satisfaction. Anyone who scales these cliffs in the industrial or informational filmmaking field is bound to appreciate the climb."

Kodak Professional Forum, our newest filmmaking publication, offers additional insight into current activities, trends and people involved in motion picture production. If you wish to be added to our Forum mailing list, write us: Eastman Kodak Company, Dept. 640, 343 State Street, Rochester, N. Y. 14650.

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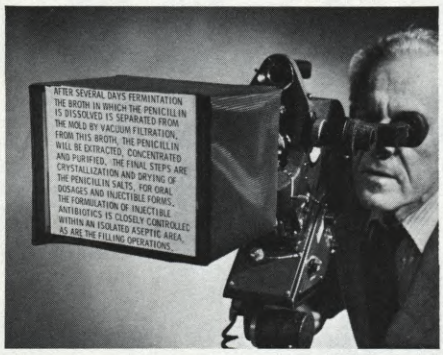
WHAT'S NEW

IN PRODUCTS, SERVICES AND LITERATURE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NEW PROMPTING DEVICE NOW AVAILABLE

In keeping with the present trend toward lightweight portable television and motion picture filming equipment, a new prompting device has been perfected (patent pending, U.S. Patent Office).

The CAMRAPROMPTER weighs *less than one pound,* enabling it to be used with hand-held cameras, presenting a brilliant image of white lettering on black background; or, black letters on a white field. No special typewriter is required, and the size of the lettering upon the "screen" can be enlarged, if desired. There are no motors; the simplified optical-electronic components remain completely noiseless as the script is advanced. It is also suitable for exterior as well as interior useage. There is no partially-silvered mirror to shoot through, consequently no loss of light and no filter factor to consider. Illustrated is the CAMPRAPROMPTER positioned in front of the camera lens; or, it may be incorporated into the lens shade or matte box housing as a detachable accessory by the camera manufacturer.

The CAMRAPROMPTER facilitates the speaker talking directly to the audience when recording man-behind-desk long sequences, television commercials, newscasts, etc., resulting in word-perfect takes the first time. There is less tension to the speaker, permitting him to make a more natural relaxed delivery, eliminating memorization problems. Face size of the MINI CAMRAPROMPTER unit is 6" by 8". For greater camera-to-subject distances, a larger model, the STUDIO CAMRAPROMPTER is in the development stage, having a viewing area of 12" by 16" and weighing approximately 3 lbs., such as is shown in the doctor's office set-up. The CAMRAPROMPTER should prove a valuable adjunct to any TV camera, video cassette system, or motion pictures, increasing the potential useage of cameras possessing this added capability.

For further information, contact: Zeper Industries, 310 Springhouse Mews, Devon, Pa. 19333.

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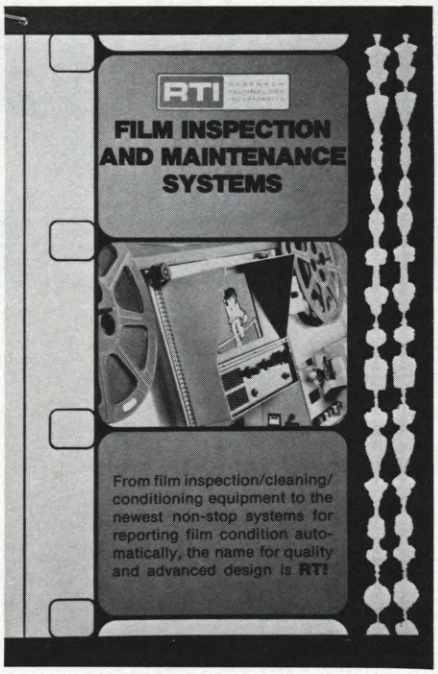
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In the RTI "consumer guide" *all five* Film Inspection Systems—Evaluator, Retectron, Pulsar, TV-120 and Omega series—each profiled with every possible option. Learn how easy RTI's exclusive Automatic Threading feature makes film equipment operation.

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The publication also includes a comparison of five different detection systems, four choices of liquid-cleaning modules, and two previewer modules—including the very newest previewer with Quik-Trac Speech Processor that lets you view films at *twice sound speed* and still understand every word!

For your free copy write Research Technology Inc., 4700 Chase, Lincolnwood, Illinois 60646, or call toll-free 800/323-7520 (if busy or calling from Illinois, Alaska, Hawaii or outside U.S.A. call 312/677-3000).

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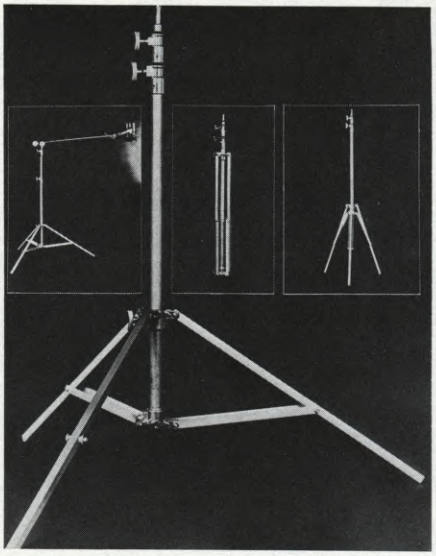

MATTHEWS PRESENTS NEW PORTABLE ALUMINUM STAND

New from Matthews. The #6029 Beefy Baby Aluminum Stand. Weighing 6½", it continues in the Matthews tradition of presenting the best marriage of portability and strength. It collapses to 40½" for storage and extends to 11'.

The Stand is constructed of anodized aluminum, utilizing long proven Matthews riser castings. Its butyrate feet not only facilitates easy movement when in use but also prevents any marring of stages in special "set" situations. The 5/8" diameter mounting pin enables it to be used with most light weight quartz fixtures.

Ruggedly constructed, the Beefy Baby Aluminum Stand has an expansive leg spread of 44", and when used with Matthews #9577 Grip Head with single extension arm it becomes a great little mini light boom.

•

THIRD Super8 SOUND CATALOG NOW READY

Super8 Sound, Inc. of Cambridge, MA is pleased to announce publication of the 3rd *Super8 Sound Catalog.* This edition—expanded to 88 pages—again continues to draw together the diverse hardware and software components of the rapidly expanding field of Super-8 film production.

The Super8 Sound Catalog continues to be the most comprehensive listing

Continued on Page 806

it may look the same, but there's a big difference

The new Swintek Mark 2L-**dBS**® transmitter and Mark 50A-**dBS**® receiver may look familiar on the outside, but big things have happened to the internal components, all significant enough to warrant a new name—the Swintek **dBS**® System.

Among the advantages offered by the Swintek **dBS** System is the virtual elimination of "buzz noises," those annoying sounds caused by arc lights, electronic equipment or other sources of interference that heretofore have been the nemesis of sound stage and location wireless recording. Now, with **dBS,** a cleaner, crisper and higher-fidelity audio recording is available.

Additionally, **dBS** increases the signal-to-noise ratio by at least 15db. Quite an achievement in itself when you consider Swintek already offers a signal-to-noise ratio higher than any other wireless microphone system in the industry.

Still another advance offered by **dBS** is the increased dynamic range (the quietest to the loudest recordable sound without distortion) without resorting to the less efficient compression method. Swintek has utilized the compander method, widely used in hi-fidelity sound under the trade names of Dolby and DBX, by modifying and combining it with the exclusive Swintek narrow band technology. The result is interference-free sound even when using any number of Swintek systems in frequencies as close to each other as 50kc.

The new Swintek **dBS** System has been successfully field tested at ranges up to 1500 feet in adverse recording conditions. And, it is the only system offering two audio inputs in the transmitter simultaneously — one accepting any musical instrument, the other, dialog or singing.

Swintek has always been synonymous with the best and most reliable wireless sound. Now, with the additional advantage of the **dBS** system, Swintek is wireless sound so excellent it can be intercut with sound from hardwire shotgun microphones.

The Swintek dBS is currently available in the Mark 2L transmitter and the Mark 50A receiver. It will soon be available in other Swintek models, including the famous handheld and Hitchhiker. Please write or call Frank Kelly for additional information.

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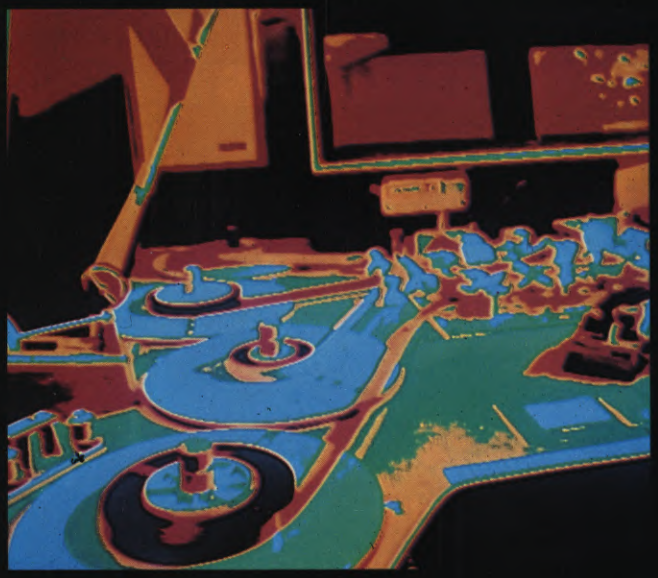

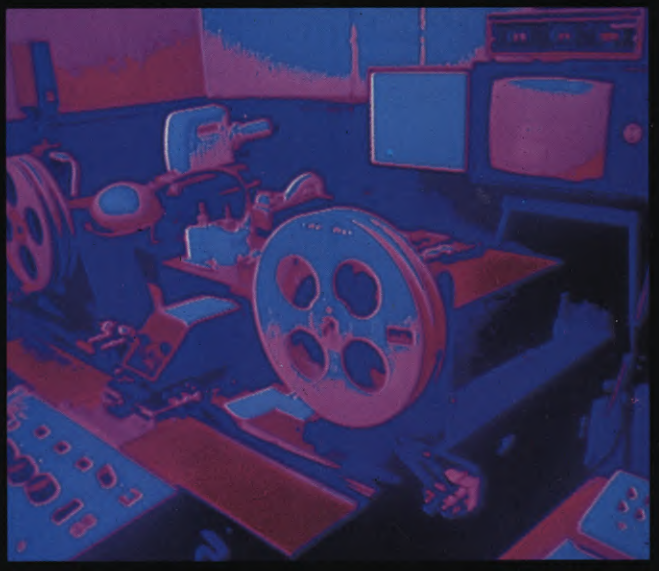

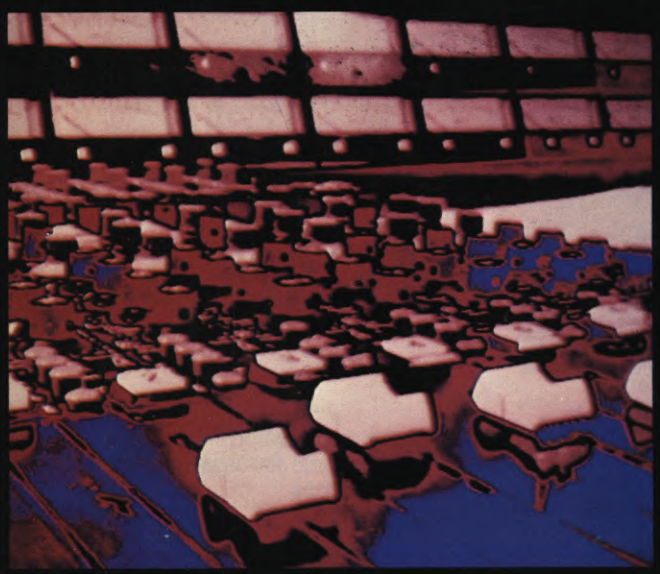

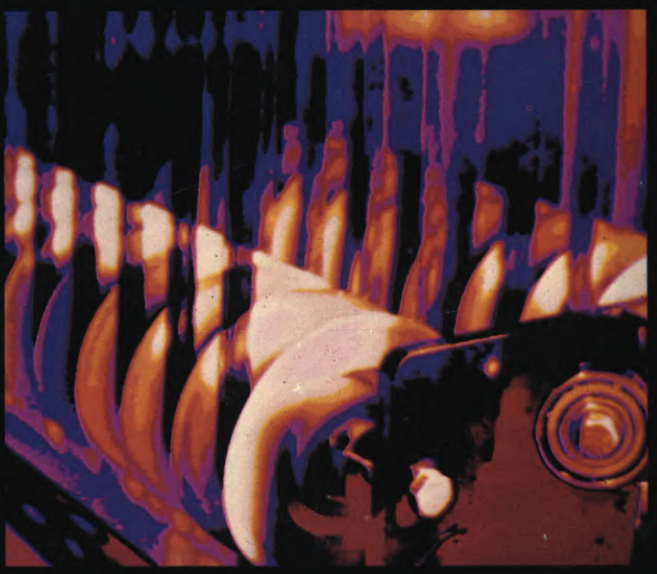

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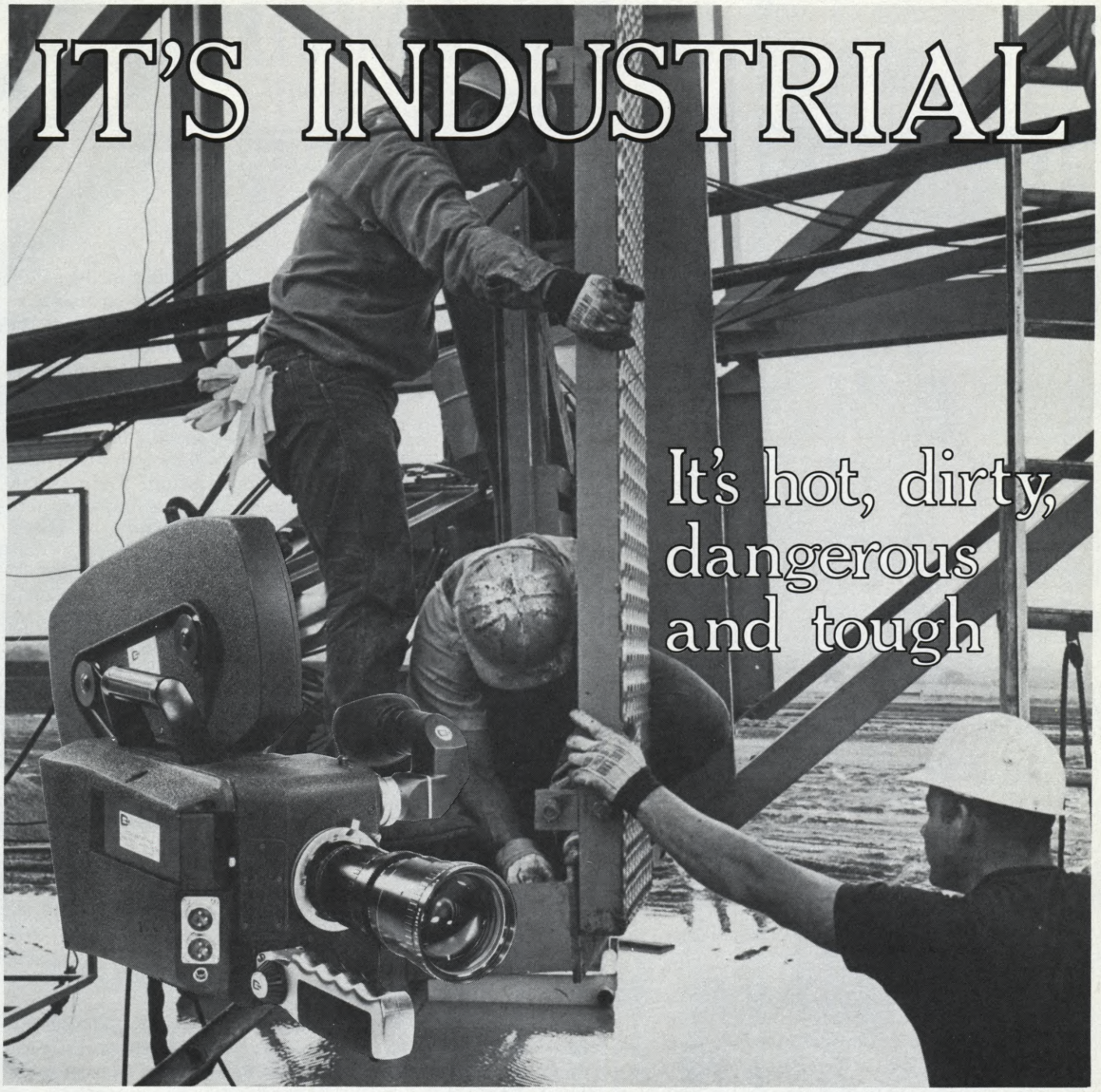

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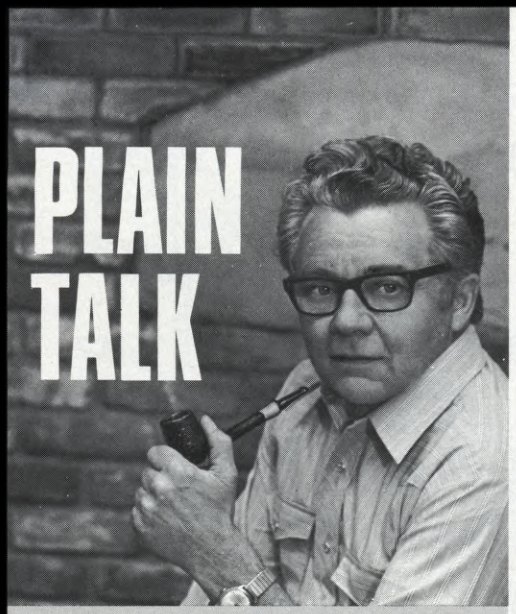

PLAIN TALK

by J. Carl Treise

Why am I writing this column? If you don't know by now, I'll tell you.

In many ways I'm an old-fashioned square. And I probably shoot off my mouth too often. But very few will deny that I'm a "square shooter".

I've been in this business a helluva long time and I damn well know what makes it tick (— and what doesn't).

I feel you should know what's going on. Both the good and the bad. After all, the more you know, the better you'll be able to buy.

You should know the limitations of a processor as well as its capabilities.

You should know that money stretches only so far. If a firm is offering you more than you have a right to expect at the price, the chances are likely that you're getting screwed.

I find it amazing that a buyer will accept a lousy unit just because it has a shiny exterior. Or that he will let himself be sold something that isn't right for him.

A long time ago, I discovered that very few buyers really know what they need. Often what they want is not what they need.

If I can help you come to the right decision and save you from a few pitfalls . . .

The effort will be worthwhile.

Even if you buy from someone else.

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QUESTIONS & ANSWERS

Conducted by CHARLES G. CLARKE, ASC. and WINTON HOCH, ASC.

(Inquiries are invited relating to cinematographic problems. Address: Q. & A., AMERICAN CINEMATOGRAPHER, P.O. Box 2230, Hollywood, Calif. 90028.)

Q I have two questions: 1) What is a color viewer? I have one with a ND-2.0 filter. How does it aid in color cinematography? 2) I want to add a warm, sun-like glow to some skies in an exterior shot. Do I just add some orange light?

A The neutral density viewing glass is sometimes used to visually judge the tonal renditions of a correctly exposed negative. It has no value as a color judging viewer. It is useful on those days of numerous intermittent clouds to determine when the cloud will pass so that the scene may be filmed in sunlight. Otherwise it is a sort of badge of office.

2) To add warm tones to a scene, a higher saturated type of #85 filter may be used, or two #85 filters may be combined to increase the saturation. Both of the above are for all-over tonal change. If you are having prints made, the laboratory can print the scene in warmer tones.

If just the sky is to be altered, such as in a backlight scene, then a graduate filter of coral hue may be used. If you do not possess such a filter, a gelatine #85 can be placed close to the lens in such a position that it only filters the sky area.

Q I have heard about the "Colorflex System" as invented by Gerry Turpin, BSC. I understand this is a method whereby light and colored filters can be used to give delicate nuances of color and tone to the film. Could you give a brief description of the apparatus?

A A brief description would not be fair to this interesting process. A complete description can be found in the January, 1973 issue of AMERICAN CINEMATOGRAPHER.

Q Do cinematographers have their own personal styles? How do they look at light? Is it first and foremost a basic for exposure? Is its primary function to illuminate the actors or to give realism, allowing the actors to fall off into the black? Should the image be a painting or a glimpse of reality? What about camera filters and post-flashing? Is it more natural to have desaturated colors or does all depend on the specific film? I realize that much has to do with the style of the individual picture and, possibly I'm wrong and cinematographers don't have their own personal styles. What do you think?

A You have, in many ways, answered your own questions. Obviously there must be enough light for exposure, next the light should illuminate the important actor or allow the audience to imagine the actor. Mood is inherent in any lighting whether intended or not. Light is a tool used by the cinematographer, he has various degrees of control over the light depending upon the circumstances which vary greatly and often drastically during a production.

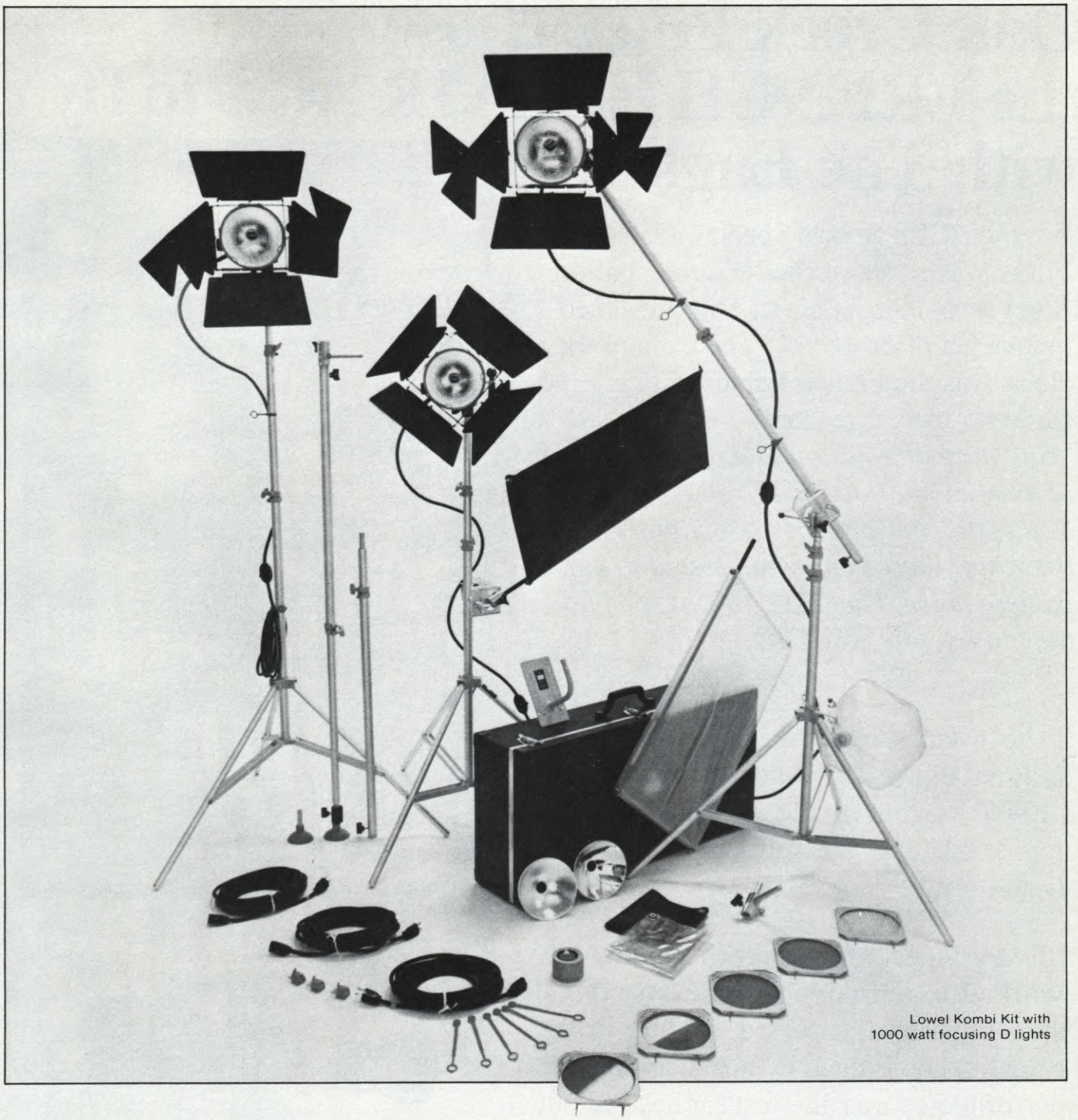
All the tools plus imagination, plus opportunity present themselves as a finished product on the screen.

Some scenes call for realism, some scenes call for beautifully composed "paintings". Versatility is highly desirable in the cinematographer.

Soft lighting, made possible with our current fast films and sometimes aided or simulated by the use of low contrast filters and flashing, is very popular at present. This style is selected by some photographers. It follows that desaturated color has its own place in usage.

Movements in art are doubtless reflected on the screen. In many cases, the art director and costume designer present the art that is photographed. I am sure some cinematographers are aware of current art trends but it is very difficult to present a motion picture with such a feel without the complete understanding and cooperation of the producer, production designer, art director, costumer, set decorator, director and cinematographer.

I believe all cinematographers have their own way of working—sometimes a style is recognized. A truly versatile cinematographer can and does change his style with the opportunities. ■



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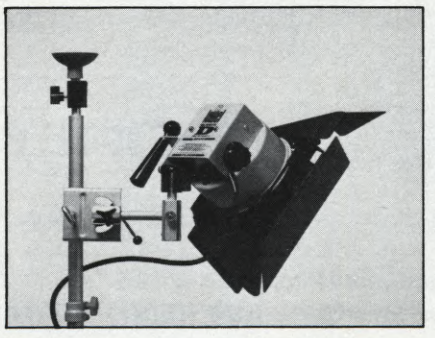

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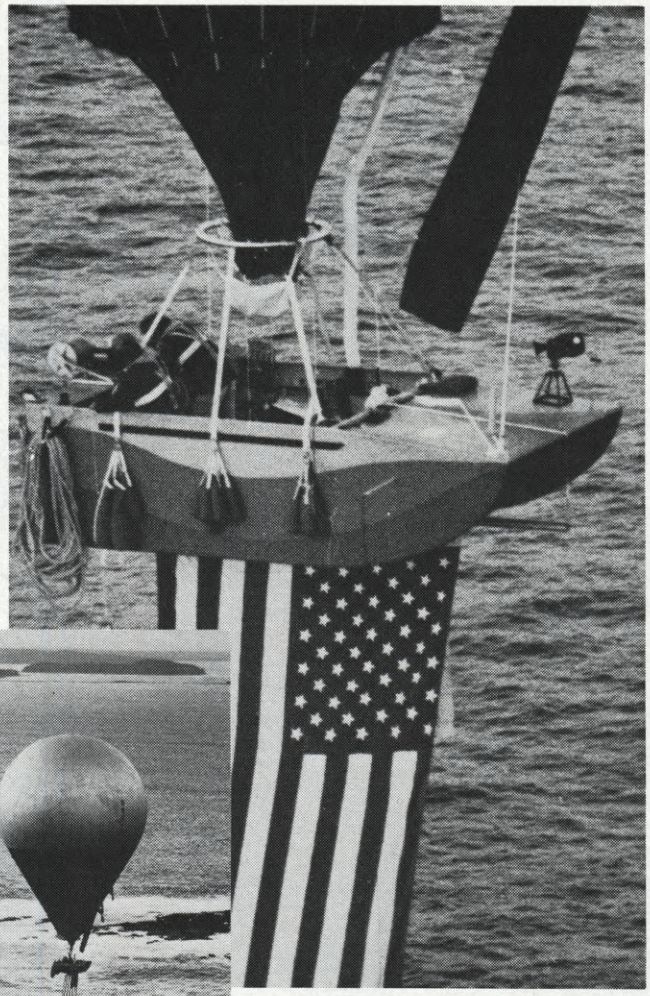
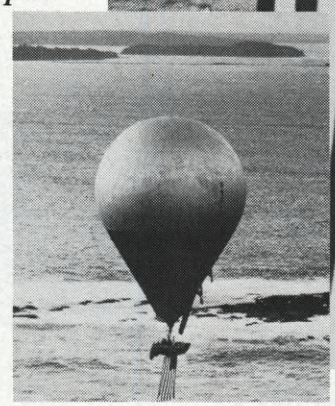
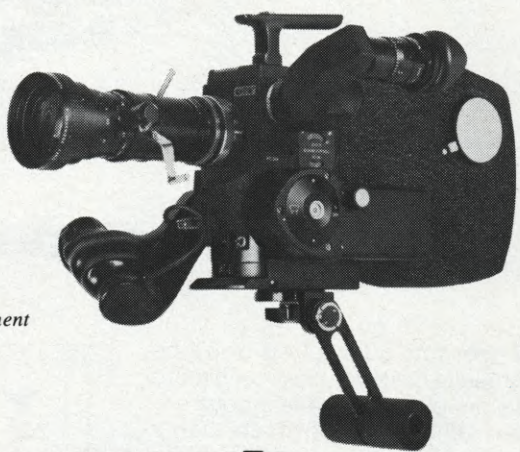


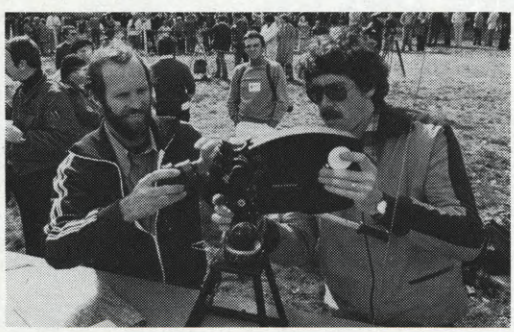
The ACL in position on the gondola



The Eagle starts its journey across the Atlantic

"Every aspect of the French Eclair ACL worked to our advantage, even through the storm and the forced landing in the Atlantic. The French Eclair ACL's rugged performance met the test far beyond our expectations."





Len Aitken and Bill Snider of Oak Creek Films check equipment prior to take-off

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CINEMA WORKSHOP

By ANTON WILSON

HAND MICROPHONES

Microphone designers have long since succumbed to the age of specialization. Today there are cardioids, hypercardioids, electret lavaliers, rf condenser shotguns and a myriad of other special types to perfectly match any specific sonic applications. Most soundmen today carry several electret lavaliers, a shotgun or shorty-shotgun hyper-cardioid and at least one old standby "hand mike", either omnidirectional or cardioid. Before the newer exotic microphones were invented, most applications had to be met with the more conventional hand (or stand) microphone. However, with a little expertise, those microphones could handle most situations.

An interview between two people can sometimes be best handled with a single omnidirectional mic, assuming the room is not too live. The mic is simply placed between the two persons. This achieves matched tonal balance, as well as good sonic perspective. Two cardioid microphones could also be employed, one for each person. This configuration (FIGURE 1) has its drawbacks. Sound from one person will reach the others microphone. This secondary signal will not be in phase with the primary signal, due to the longer distance it must travel. As a result, the two signals will cancel each other at certain frequencies, yielding an unnatural hollow, or possibly "tinny", sound quality. One cardioid placed between the two people may give better results, again assuming a fairly dead and quiet acoustical environment. The single cardioid can be positioned straight up, as in FIGURE 2, or pointed down from a boom or, as in FIGURES 3 and 4, pointed down using a desk as a reflecting surface. If the microphone is used facing up, it must be placed as close to the desk as possible (FIGURE 5). Otherwise, the situation in FIGURE 6 will result. Similar to the condition in FIGURE 1, the reflected sound from the desk will arrive out of phase with the direct sound, causing cancellation of certain frequencies. The problem can be rectified by placing the microphone close to the desk (FIGURE 7). The cardioid pattern does not roll off much before 90° from axis. The microphone is just as receptive to the sound coming from the side (FIGURE 7) as it is to the front (FIGURE 6). Thus, the setup in FIGURE 7 should not impair quality nor increase noise; yet it will reduce the possibility of phase cancellations, due to multipath. An alternate solution would allow the position of FIGURE 6, but with a piece of foam or other sound absorbing material under the microphone to kill the reflected sounds.

An additional solution to FIGURE 1 is the capsule-to-capsule cardioid configuration. Placing the two cardioids back-to-back and connecting them out of phase yields a "figure 8" pattern (FIGURE 8) that will reject sounds from the side.

Where loud low-frequency ambient noise is a problem, phase cancellation

Continued on Page 794

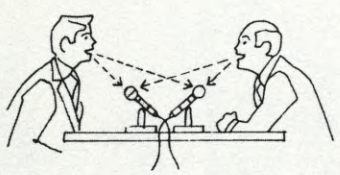

FIGURE 1

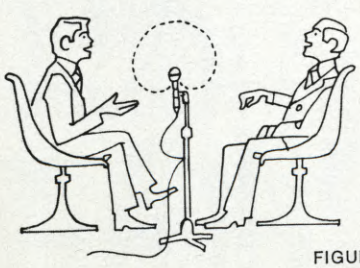

FIGURE 2

FIGURE 3

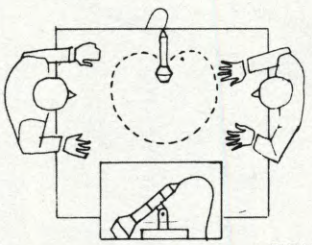

FIGURE 4

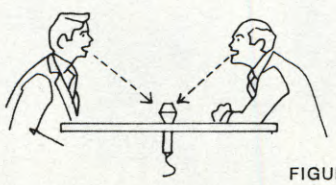

FIGURE 5

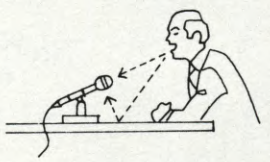

FIGURE 6

FIGURE 7

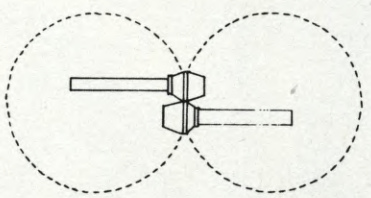

FIGURE 8

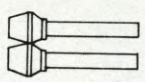

FIGURE 9

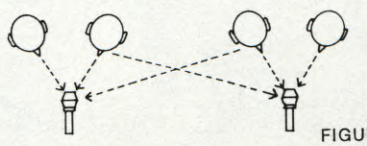

FIGURE 10

Diagrams courtesy of AMG.

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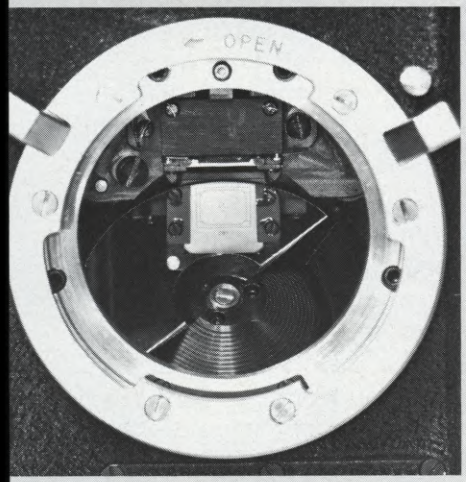

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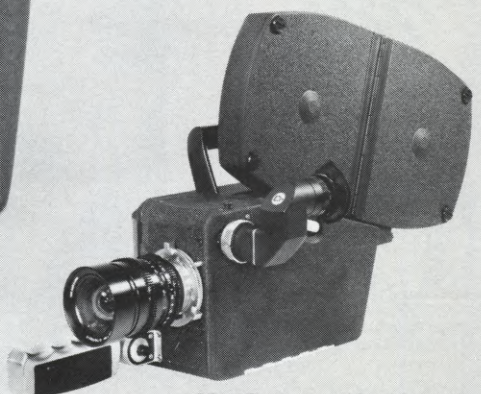

CP-16R shown with wide angle *Ultra T* 9mm prime lens (T1.35). Other prime lenses in Cinema Products' *Ultra T* series include 12.6mm, 16mm and 25mm lenses, all rated at T1.25.

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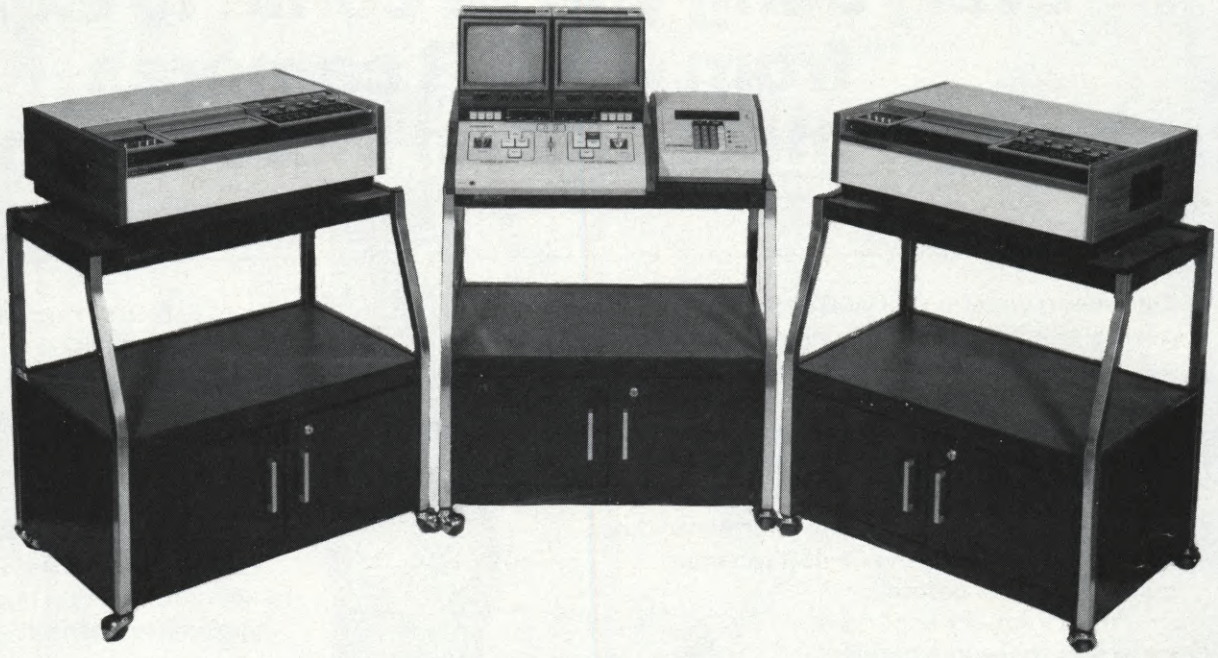

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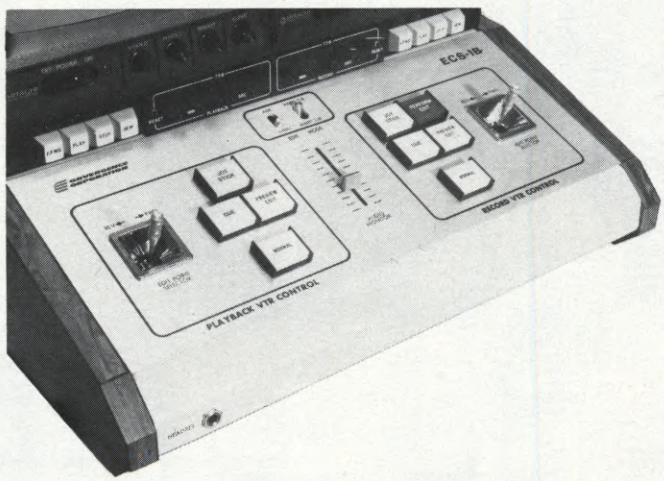

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Cinematographer Tak Fugimoto and director Alan Rudolph on location in Venice, California, with Drake Woodworth and Mike Crane of Deluxe during the filming of the Robert Altman production of "REMEMBER MY NAME."

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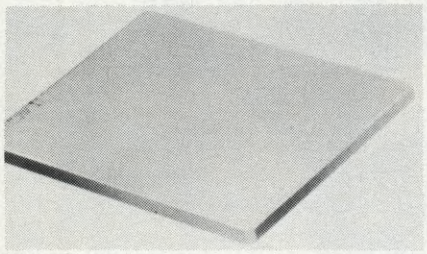

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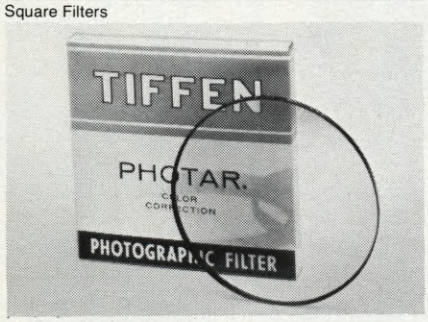

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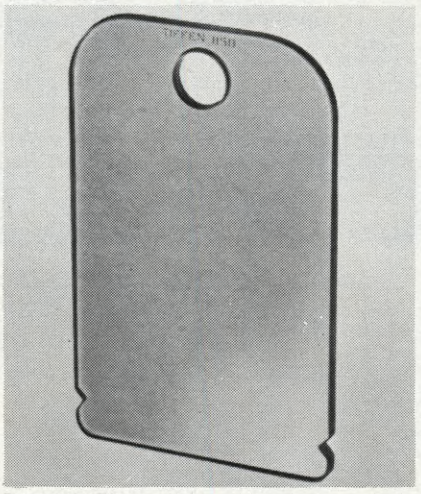

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THE BOOKSHELF

By GEORGE L. GEORGE

CINEMATIC DATABANK

The long-awaited revision of Arthur Knight's panoramic history of the movies, THE LIVELIEST ART continues as the best available one-volume chronicle of film's progress. The updating has been effectively blended with the earlier (1957) text, displaying Knight's impeccable judgment and his knowledgeable appreciation of the art's evolution (Macmillan $15.95).

Prof. Robert H. Sterling, in THE CELLULOID EMPIRE, follows the development of the U.S. motion picture industry. He analyzes with broad scholarship the corporate structure and management control of the companies whose pictures were most influential in shaping the life style of millions (Hastings House $15.75/7.95).

In MEDIA CULTURE, James Monaco assesses with vigorous logic and informed documentation the molding of public opinion by the concerted efforts of film, television, radio and print. He has judiciously selected some 25 pieces by established authorities that dissect each aspect of the mass media in the exercise of their respective powers (Delta/Dell $4.95).

Cobett Steinberg has compiled in REEL FACTS a mass of statistics, figures and data concerning the movies, a convenient reference tool that includes awards, "ten best" lists, money-making films, boxoffice receipts, major studios' history and production records, and codes and regulations (Vintage/Random House $3.95).

An expert assist to filmmakers in the proper presentation of a script to a producer, PROFESSIONAL WRITER'S TELEPLAY/SCREENPLAY FORMAT by Jerome Coopersmith is a highly practical and well-organized manual published by the Writers Guild of America, East. This revised edition explicitly spells out all the standard stylistic requirements (WGA, E $2.50).

Originally published in *Screen,* the periodical of the British Society for Education in Film and Television, some 20 articles gathered in SCREEN READER address themselves to varied aspects of film art, ranging from technique (deep focus photography) to history (French

left-wing films) to sociology (ideology of the TV documentary). This is a challenging book, rich in original thinking and vigorously stated opinions (N.Y. Zoetrope $7.60).

A collection of articles on the status of film in Canada, edited by Seth Feldman and Joyce Nelson, CANADIAN FILM READER discusses the problems that confront the national film industry. American domination of the market, local production, the National Film Board are some of the significant topics handled in this substantial volume (N.Y. Zoetrope $6.25).

★ ★ ★

ASPECTS OF THE CRAFT

A critical anthology edited by Leo Braudy and Morris Dickstein, GREAT FILM DIRECTORS affords outstanding commentators and critics a forum to air often divergent—but always stimulating—views about 23 celebrated directors, Antonioni, Bunuel, Griffith, Hitchcock, Kurosawa and Welles among others (Oxford U. Press $7.50).

In THE GREAT MOVIE COMEDIANS, Leonard Maltin discusses the work and characteristics of 22 comics of all styles, offering perceptive insights into the craft, personalities and ambitions of such performers as Chaplin, Marie Dressler, Will Rogers, Jerry Lewis and Woody Allen (Crown $12.95).

An authoritative study of film design, Léon Barsacq's CALIGARI'S CABINET AND OTHER GRAND ILLUSIONS is an historic work that elucidates the contribution of the art director and scenic designer to cinema art. Expertly revised and edited by Elliott Stein, this classic volume (now in paperback) combines an appreciation of the esthetics of film design with outstanding examples of the craft's technical achievements (Plume/NAL 45.95).

The script of John and Faith Hubley's award-winning animated short, A DOONESBURY SPECIAL, appears in a richly illustrated edition. The film's director Garry Trudeau, creator of the Doonesbury comic strip, adds his comments about the filming, his collaboration with the Hubleys and his approach to animation art (Sheed Andrews & McMeel, 6700 Squibb Rd., Kansas, KS 66202; $5.95).

The technique of film animation is made available by Zoran Perisic to any moviemaker in THE FOCALGUIDE TO SHOOTING ANIMATION, a detailed, though simplified, manual covering thoroughly equipment and procedures (Hastings House $6.95).

In DEERSTALKER!, Ron Haydock reassesses the more than 400 films featuring the celebrated sleuth Sherlock Holmes. Painstakingly accurate research uncovers innumerable details that give this book primary reference value (Scarecrow $12.50).

Reflecting a long-gone era, THE SATURDAY EVENING POST MOVIE BOOK reprints stories it published as far back as 1907, a charmingly naive collection with a whiff of nostalgia (Curtis $9.95).

★ ★ ★

NAMES IN THE NEWS

A stimulating collection of articles and movie reviews by François Truffaut, THE FILMS IN MY LIFE presents vivid comments on the evolution of cinema art and the effect the French New Wave had on a whole generation of filmmakers (Simon & Schuster $12.50).

In FEDERICO FELLINI: AN ANNOTATED INTERNATIONAL BIBLIOGRAPHY, Barbara Anne Price and Theodore Price have compiled a highly useful reference work of writings by and about Fellini. It includes detailed filmographies, interviews, comments, critiques, and an extensive list of books about all aspects of the director's career (Scarecrow $11).

Ostracized by Hollywood for her political beliefs even before the House Un-American Activities Committee witchhunts and a victim of discretionary institutionalization by her family, actress Frances Farmer led a horrendous life revealed in gruesome detail by William Arnold in SHADOWLAND, a chilling report of suppression and bigotry (McGraw-Hill $9.95).

The Presley cult is still in full sail, as seen in an appealing compilation by Mick Farrent and Pearce Marchbank, ELVIS IN HIS OWN WORDS. Abundantly illustrated with mostly informal stills, this collection of public utterings by the superstar reveals an unaffected, factual and artless lad (Quick Fox $4.95). The reader supplies the answers in THE ELVIS PRESLEY TRIVIA QUIZ BOOK, a collection of 1000 ingenious questions dreamed up by Helen Rosenbaum (Signet $1.50).

Suzanne Munshower's JOHN TRAVOLTA is an illustrated biography of the promising young actor who rose to sudden stardom in *Saturday Night Fever* and the recent *Grease* (Ace Books $1.95). ■

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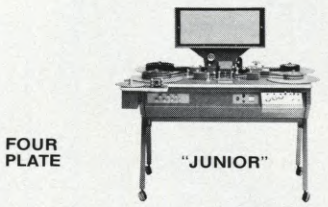

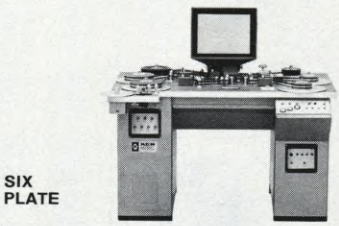

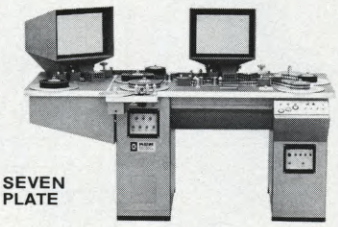

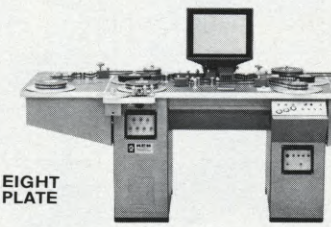

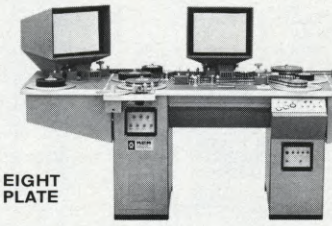

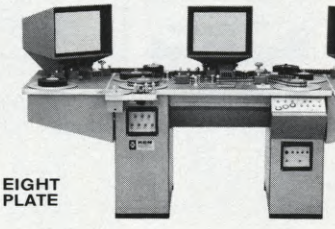

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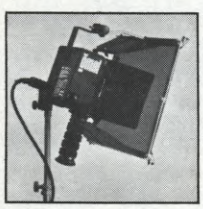

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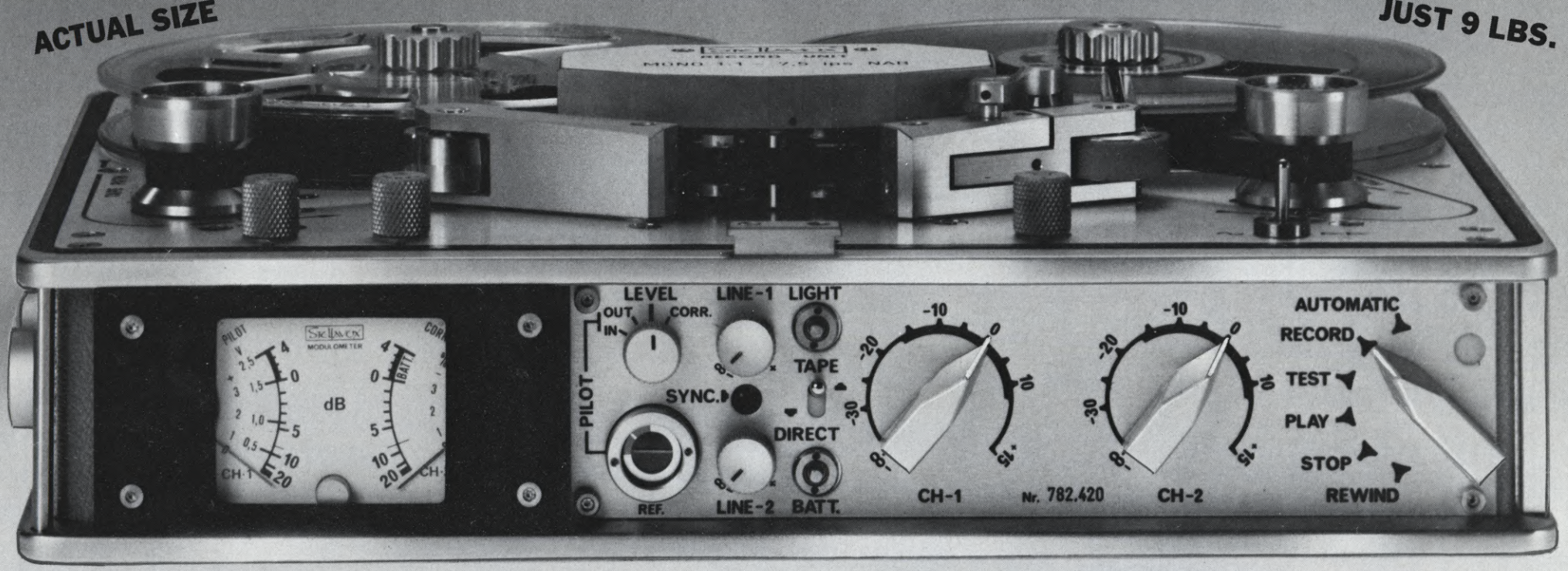

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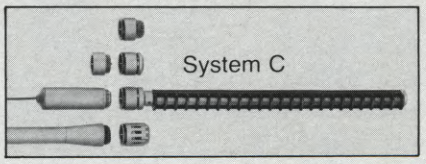

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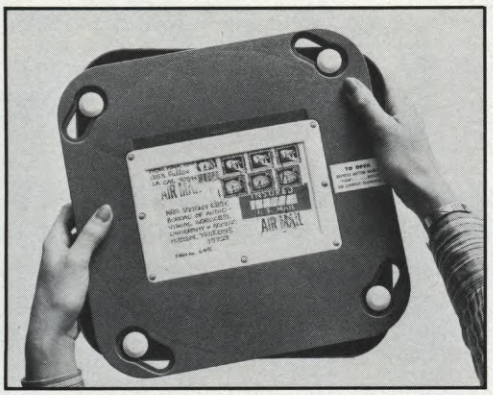

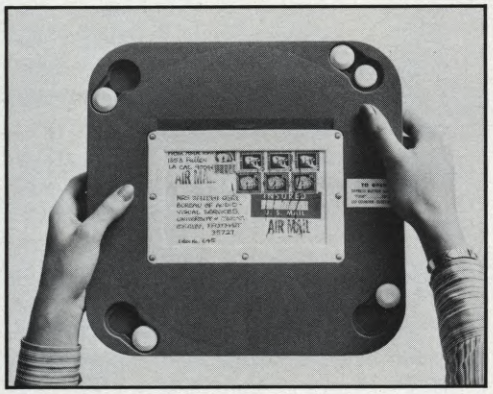

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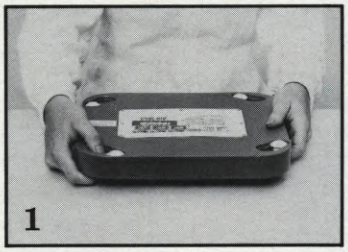

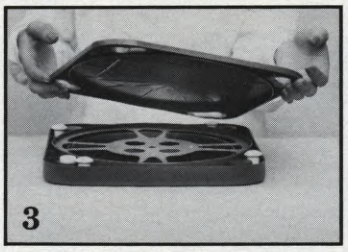

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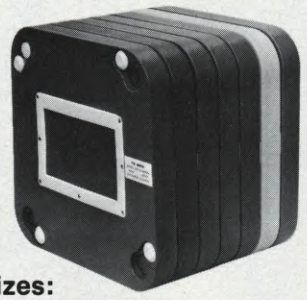

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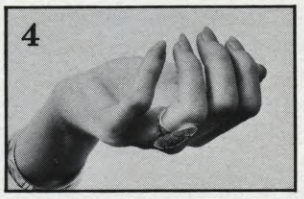

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BEHIND THE SCENES OF GREASE

A long-running Broadway stage musical is transferred to the screen with great verve, style and technical polish

In June, 1971, writers Jim Jacobs and Warren Casey were given the opportunity to try out their musical glorification of an earlier decade in a small experimental theatre in Chicago. A pair of smart New York producers caught their act and made an on-the-spot deal to adapt the show for New York. On Valentine's Day, 1972, the Fifties came to life on stage at off-Broadway's Eden Theatre, and on June 27th, 1977, the Fifties came to film when the Robert Stigwood/Allan Carr Production of "GREASE" started shooting for Paramount Pictures.

In between, "GREASE" has racked up nearly 2200 performances on Broadway, becoming the longest-running hit currently on the boards, and passing "OKLAHOMA!" to become the eighth-longest running production in Broadway history. The show has gone on to become an American classic as well as an international hit—with versions turning up in Mexico, Europe, and Australia and with national companies attracting "GREASE" fanatics wherever they go. Precipitating the rampant Fifties craze which has gone on to produce such major successes as "AMERICAN GRAFFITI" and television's top-rated "HAPPY DAYS" series, a stage production of "GREASE" coincidentally returned to the Pantages Theatre in Hollywood while the film was shooting. The show's popularity would seem to be never-ending.

While fascination with the recent past has now become an American cultural staple, when "GREASE" first opened there was a bit of doubt about whether there would be wide interest in so recent a decade. The answer is both simple and complex. "GREASE" is not just a nostalgic look at a simpler decade; it is peopled with characters of universal appeal—lovable, pop art renditions of identifiable kids. It's an energetic and exciting musical homage to the age of rock'n'roll, and the music captures audiences in much the same way that Elvis Presley's tunes did. "GREASE" also happens to be rather perceptive on issues of pride and self-image, but its major appeal is that it's fun.

A whole lot nostalgic and appropriately a bit frantic is the National Bandstand sequence in the Robert Stigwood/Allan Carr Production of "GREASE" for Paramount Pictures. In case anyone doesn't know, the vehicle takes its name from the heavily lubricated hairdos sported by young American males during the Fifties.

Producers Robert Stigwood and Allan Carr each have a background in presenting highly commercial properties for the public's entertainment. Carr may be Hollywood's most celebrated personal manager, representing and guiding the careers of some of the most exciting personalities in the world of show business—Ann-Margret, Peter Sellers, Nancy Walker, Marvin Hamlisch, Stockard Channing . . . He was creative consultant in the marketing and promotion of "TOMMY", and is renowned for giving the most glorious parties in Hollywood.

Producer Stigwood is the founder of R.S.O. Records, which features such top artists as Eric Clapton and the Bee Gees. He produced "TOMMY" and recently had completed "SATURDAY NIGHT FEVER" starring John Travolta, and he masterminded the success of "JESUS CHRIST SUPERSTAR" from records and concerts to theatre and film. Together they would seem to have the ideal flair for presenting "GREASE" on film.

To make "GREASE" shine, Stigwood and Carr assembled an outstanding cast and crew. John Travolta, well-known to American TV viewers as Vinnie Barbarino on the top-rated "WELCOME BACK KOTTER" series, was everyone's first choice to play the role of Danny Zuko on the screen. Fresh from filming "SATURDAY NIGHT FEVER" (for which he received an Academy Award nomination as Best Actor) for Stigwood, Travolta seemed to have just the right mixture of animal magnetism and innocence.

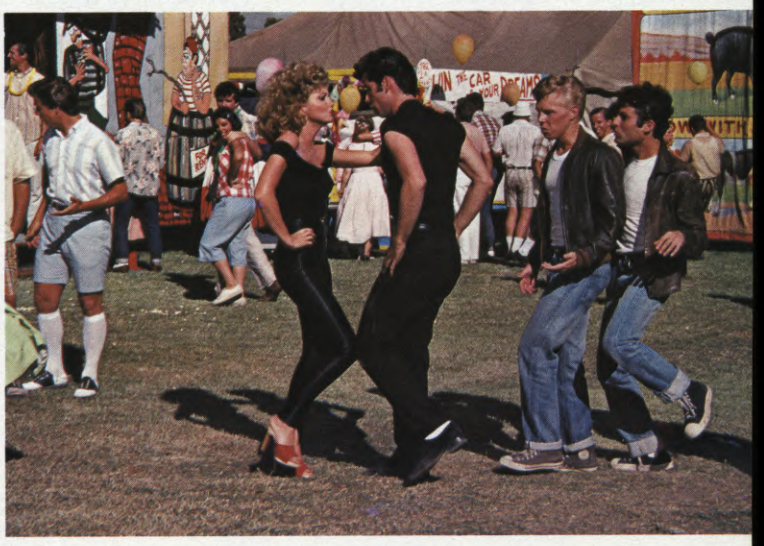
To complement Travolta, Stigwood and Carr persuaded international recording star Olivia Newton-John to make her American film debut. With more Gold records and worldwide awards than any other contemporary female vocalist, Olivia stars as Sandy, Travolta's beautiful and painfully innocent love interest. Stockard Channing, acclaimed on Broadway in "TWO GENTLEMEN OF VERONA" and on film in "THE FORTUNE", rounds out the starring roles as Rizzo, a tough-talking, very liberated "Pink Lady".

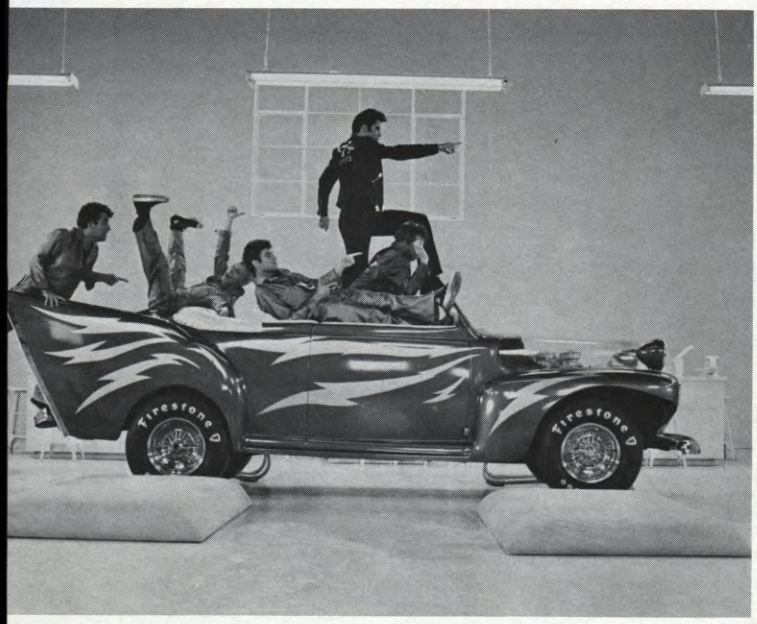
Making special guest appearances in the film is an impressive group of stars reminiscent of the Fifties. Eve Arden plays Rydell High School's Principal

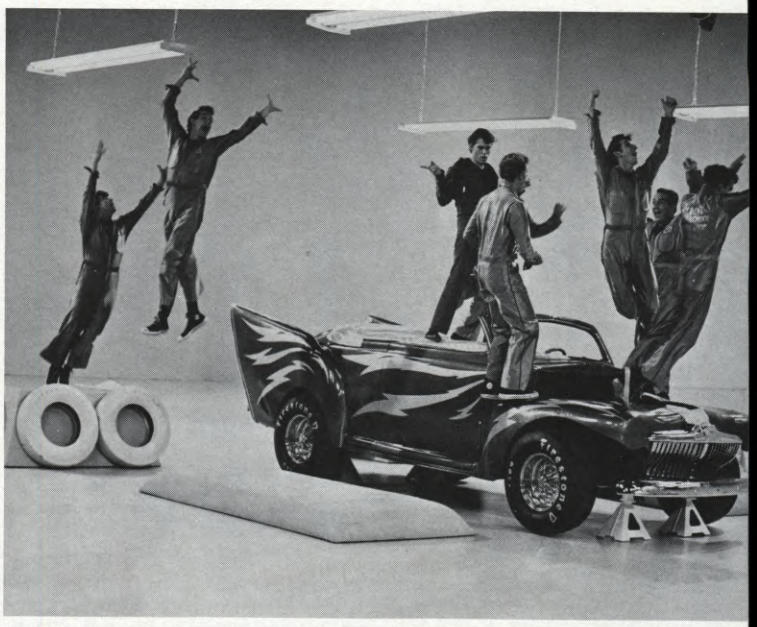
Even though the principals might be considered by purists to be a bit "mature" to be playing high school students, the film version of "GREASE" is a triumph of inspired casting. (LEFT) International recording star Olivia Newton-John plays the fresh young innocent from Australia who is welcomed aboard by a brash group of American schoolmates. (RIGHT) John Travolta, described as "just the right mixture of animal magnetism and innocence,", leads a musical number with his buddies staged on the high school bleachers.

The filmed "GREASE" features inspired choreography by Patricia Birch, in a repeat of her work on the stage version. (LEFT) Olivia Newton-John and John Travolta "dig out" during the National Bandstand sequence, a thinly veiled takeoff on Dick Clark's American Bandstand television show, which was widely popular with American teenagers during the Fifties. (RIGHT) Stockard Channing and partner "dance up a storm".

The climactic sequence of "GREASE", and its biggest production number, takes place in the course of a carnival on the school's football field. This sequence was filmed at John Marshall High School in Los Angeles. Other actual exteriors were shot on the campus of Venice High School. The National Bandstand sequence was staged in the gymnasium of Huntington High School. Ironically, an elaborate gymnasium set, encompassing several sound stages, was built at Paramount Studios for the party which followed the film's benefit premiere at the Chinese Theatre in Hollywood.

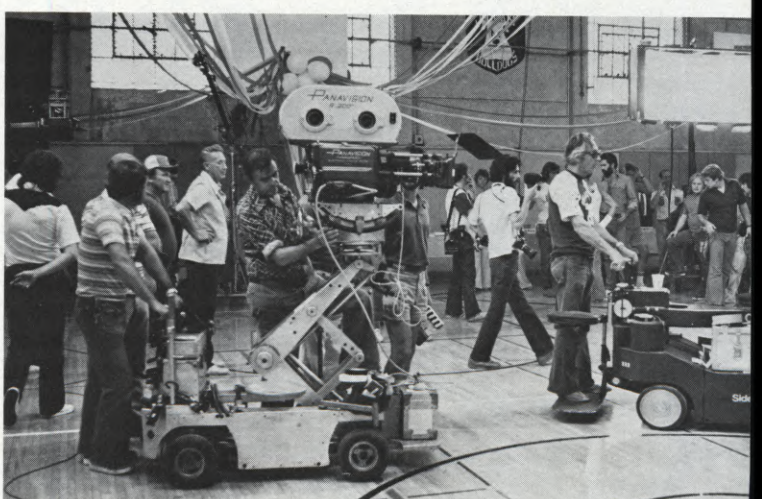






Spectacular acrobatics incorporated into the choreography of "GREASE" demanded the talents of exceptionally athletic dancers. In sequential photographs of the fantasy sequence shown (ABOVE and BELOW) here, male dancers perform prodigious flips and leaps, using a souped-up car as a centerpiece. Endowed with seemingly limitless energy, they endured repeated takes of the strenuous action without complaint.

The gymnasium of Huntington High School is "dressed" and rigged in preparation for shooting the National Bandstand sequence. The decor is typical of high school gymnasia all over America, which are regularly converted into "magic places" for Senior Proms and such through the lavish application of colored streamers and balloons.



McGee; Frankie Avalon is Teen Angel; Joan Blondell is Vi, everyone's heart-of-gold, fast-talking confidante/waitress; Edd Byrnes appears as Vince Fontaine, the slick host of National Bandstand; Sid Caesar is Coach Calhoun; Alice Ghostley appears as automotive repair shop teacher Mrs. Murdock; Dody Goodman is the confused school secretary; and Sha-Na-Na is everyone's favorite Fifties group, Johnny Casino and the Gamblers.

On the other side of the camera, 30-year-old Randal Kleiser is making his feature film directorial debut with "GREASE". A recent graduate of USC, Kleiser first received attention for his prize-winning short, "PEEGE". He went on to direct several episodes of television's "FAMILY" series, along with the made-for-TV films "ALL TOGETHER NOW", and "DAWN: PORTRAIT OF A TEENAGE RUNAWAY". His recent "THE BOY IN THE PLASTIC BUBBLE", starring John Travolta, was a huge hit with both the critics and the Nielsens, and he came to "GREASE" directly from "THE GATHERING", starring Maureen Stapleton and Edward Asner, a Christmas, 1977 offering.

Four-time Tony nominee Patricia Birch repeated her role as choreographer for the film version of "GREASE". She also created the musical staging for "You're a Good Man, Charlie Brown", "Diamond Studs", "The Me Nobody Knows", "Over Here!", "Candide", "A Little Night Music", "Pacific Overtures", "Music Is . . .", and "Happy End".

Bill Butler, whose credits include "ONE FLEW OVER THE CUCKOO'S NEST", "JAWS", and "THE CONVERSATION", was the film's Director of Photography. And Bronte Woodard ("Meet Me At The Melba" and the soon-to-be filmed "The Lonely Lady") wrote the screenplay of the show for the screen, adaptation by Allan Carr based on the original musical by Jim Jacobs and Warren Casey.

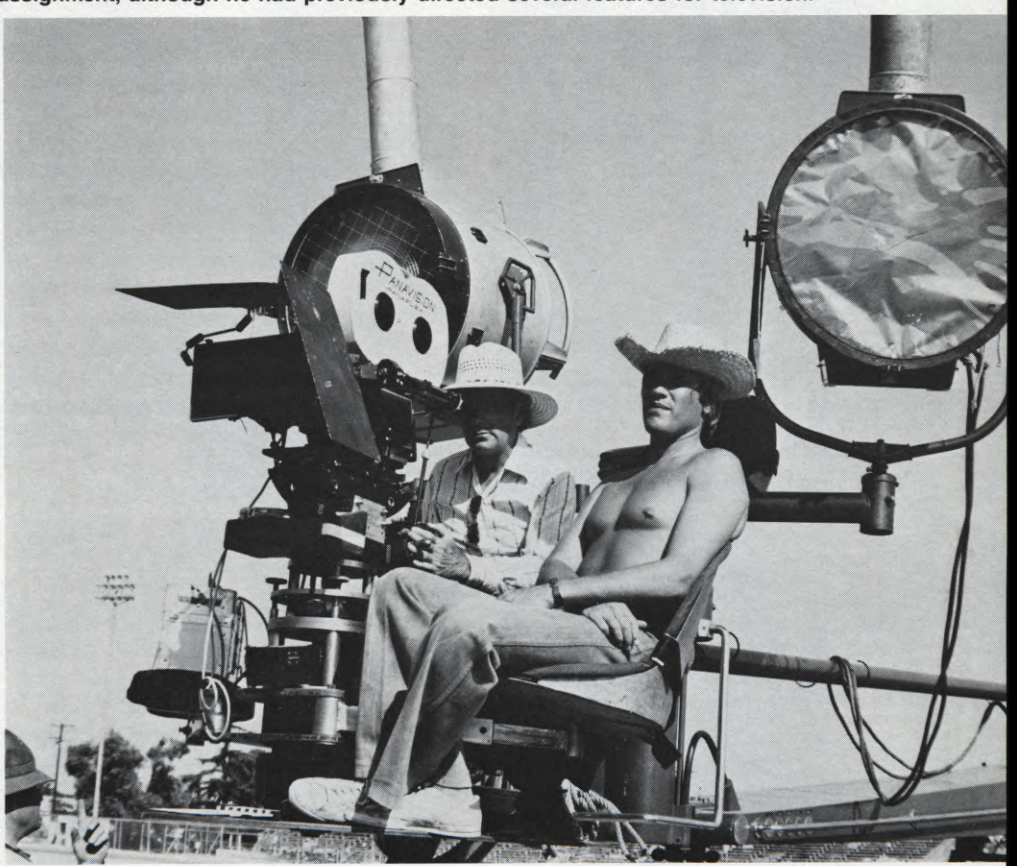
The Broadway score of "GREASE" has been supplemented by a selection of genuine Golden Oldies from the Fabulous Fifties, as well as by original songs contributed by Louis St. Louis and Sha-Na-Na's Scott Simon, and by John Farrar.

As for the rest of the cast, those landing the roles competed with literally thousands of applicants. To insure the best possible selections, an unprecedented open call for dancers was held in both New York and Los Angeles, and the successful casting marathon turned out the finest on both coasts. Everyone in "GREASE" had to be able to dance, and even the dance extras were assigned non-speaking roles which they essayed throughout the film.

Dancers relax on the floor of the gymnasium during a break in the filming. To insure the best possible selection of dancers for the film, an unprecedented "open call" was held both in New York and Los Angeles and the successful casting marathon produced a selection of the finest performers from both coasts.

"GREASE" was shot at Paramount Studios and on location around Los Angeles. Venice High School was selected for the exteriors as Rydell High, representing the typical school of the period. Classroom scenes and the dance contest took place at Huntington High School, with the carnival/finale filmed at John Marshall High School. Major production numbers, including a pair of lavish fantasy sequences, were shot on sound stages of the Paramount lot. ■

Director of Photography Bill Butler, ASC (behind the Panaflex camera) and 30-year-old director Randal Kleiser set up an exterior shot from the crane. For Kleiser, not long graduated from the University of Southern California, "GREASE" was his first theatrical feature assignment, although he had previously directed several features for television.



PHOTOGRAPHING GREASE™

The challenge: to successfully "open up" a stylized stage musical to the realistic dimensions of the motion picture medium, while still evoking an aura of the "Golden Age" of the American musical film

By BILL BUTLER, ASC
Director of Photography

The particular challenge of photographing a musical film like "GREASE" is that it involves elements that you don't encounter in a show of a different kind. In musicals—especially a musical of this type—you have to consider the motion of the camera, as well as the motion of the dancing. You have to decide how best to show the dancing, because a closeup of someone's face when that person is dancing doesn't show the audience much of the body movement. I don't know of any musical which does not involve seeing the entire person. To put across the story line, while photographing the musical numbers properly, is really the challenge.

Allan Carr asked me to photograph "GREASE" when I was shooting "CAPRICORN ONE" and, although I admired his flair for this kind of show, I wanted to wait to see who the director would be before I agreed to do it. Allan Carr is certainly the right producer for this kind of picture because he understands the musical format and I think he's a little bit in love with the old Hollywood style of doing such films. I thought that it might be exciting to tackle a musical with him. At the same moment, I realized that there are a lot of traps in making musicals and that you can go wrong very easily. Musicals have lost favor with the public, mainly because they have been done poorly. You have to avoid giving them something that is poorly constructed, poorly timed and poorly photographed. You have to make sure not to have someone break into song at the wrong moment. That timing is very delicate, and people will react to such a jolt in a very negative way.

I have a lot of musical elements in my background, so I think that I understand something of the medium. I did the Chicago Symphony on television for something like seven years and I did many musical numbers live during my television days in Chicago. I've had a lot of experience in the area of musicals, but I'd never had the opportunity to photograph a musical film until Allan Carr called me. I was hesitant, however, to take the picture until a director had been assigned, because the relationship between director and cameraman is very important. When they did sign a director, he was a man whom I thought it would be interesting to work with and I agreed to do the show.

Shortly after that, the director changed his mind because he didn't feel that he'd had enough preparation time, and he left

In response to Producer Allan Carr's nostalgia for early Hollywood musicals and his desire that "GREASE" should have some of that same visual style, Cinematographer Bill Butler (even before a director or choreographer had been selected) suggested that two fantasy numbers be included in the film. One of them (ABOVE) featured "Teen Angel" Frankie Avalon in a number entitled *"Beauty School Dropout"*. The other (BELOW) began in a realistic garage, but made a quick transition to the dreamlike fantasy set shown here.

(ABOVE) Scenes from the National Bandstand dance contest sequence, one of the flashiest production numbers in the picture, which was shot in the gymnasium of Huntington High School. (BELOW) Sets and locations in "GREASE" duplicate typical teenage trysting spots: (LEFT) The open convertible at night, and (RIGHT) The high school malt shop. Most of the picture was shot in actual locations, with only a few sets constructed at Paramount Studios.

the picture. As things now stood, I had agreed to do the picture, but we had no director. So Allan Carr and I went to New York to look for a director. There, together with Robert Stigwood, we had meetings to consider several possible directors, but nothing jelled. However, it was getting so close to production time by now that it was necessary to settle on some definite philosophy of how the picture should be approached.

I had been reluctant to lay out my ideas along those lines until we had a director set, but when Mr. Carr and Mr. Stigwood asked me if I had any guidelines to suggest, I said that I certainly did have and I laid out all of those for them. As it turned out, that pretty well became the blueprint for the movie that we made. I realize that it's unusual for a cameraman to have that kind of influence, but it gave me an opportunity to draw on my background in shooting musical productions.

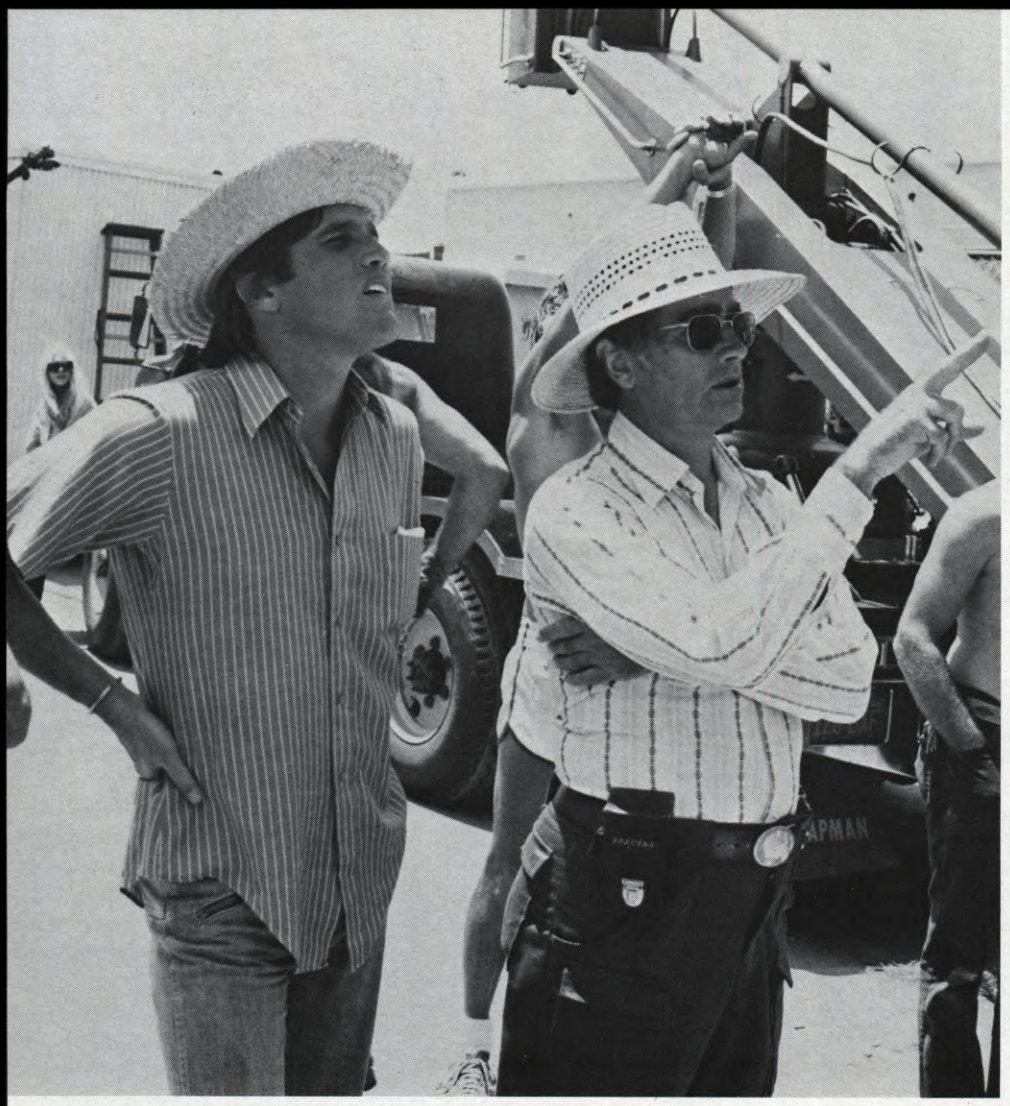
Later on, fortunately, Pat Birch was hired as choreographer for the film, and while she had not had much experience with movies, she certainly had had an abundance of experience with "GREASE", having choreographed the show on Broadway. She was very eager to learn how to choreograph for the camera, as differentiated from the stage, and we had a very good working relationship. She was very cooperative in making the changes that I felt were necessary to get the feeling of motion on the screen, rather than working toward a proscenium, as was her custom.

While in New York, I went to see "GREASE" on the stage (it had been running for seven years) and I tried to extract what I thought would be the best elements to go for in the movie. It is not a vehicle with a great message; the period of the Fifties was not a great message time. But the energy that I felt coming off that stage seemed to be the most powerful element going. I knew that it would be very important to select to play the parts the kind of personalities who could focus that energy.

In that respect, we were very lucky to get John Travolta to play the male lead. It didn't hurt, either, that his success in "SATURDAY NIGHT FEVER" and his role in "WELCOME BACK KOTTER" had already made him a national star. He was wonderful to work with on the movie and we had a great time. Olivia Newton-John, playing the part of the naive little girl who falls in love with him, was also wonderful to work with and a great bit of casting.

My contributions to the film, aside from the photography, were the result of my being able to draw on past experience. A man by the name of Robert Trendler in Chicago taught me a lot about how to put a musical show together. He was the musical director of the television station where I worked and he taught me a lot about pacing and timing and when to do what. Looking at "GREASE" now, the result of the efforts we put into it, I would say that it works. That's the only judgment relative to success that I can make about any film I've worked on.

"GREASE" was also the first feature motion picture for director Randal Kleiser and he, too, was a person who was very anxious to learn, very willing to listen to good advice, so he and Pat Birch and I



Director Randal Kleiser and Cinematographer Bill Butler discuss a set-up. Of Kleiser, Butler says: "One of the key elements that Randal contributed to the show was his ability to work with young people . . . He has a fine imagination and a lot of excellent ideas. He also has a respect for the people who know how to do things and a willingness to learn—all of which works in his favor."

formed what I consider to be a very cooperative threesome on a day-to-day working basis. All three of us listened very closely to what Allan Carr had to say about his vision of what he felt a film musical should be. We were very sensitive to his desire to lend a bit of the old-fashioned Hollywood musical flavor to the movie, and that's the direction we took.

One of the elements that make the difference between success and failure in a musical, I feel, is that very critical moment of timing when you have people talking on the screen and playing out a dramatic scene and then you decide to have them sing. If that is not very carefully handled, if it is not properly motivated, you will fail and your musical will fail. I think that in "GREASE" those transitions are very skillfully made. We did everything possible with camera and choreography to make them work. If a song was evolving out of a dance, then Pat Birch would do everything she could to motivate the movement into singing. If the song was to come out of a dramatic situation, Randal Kleiser would do everything he could to motivate the action into singing.

I felt that another important thing in this film was to get all of the movement possible out of the camera—in the proper places, of course. I did not intend to go crazy with the camera, because I'm very conservative in the way I handle a camera, especially in feature films. Yet, I wanted all the camera movement, *a la* "WEST SIDE STORY", that I could get. Pat Birch was very willing and able to help that movement with her choreography. I think we succeeded in coming up with a combination of camera movement and choreography that is interesting and helps move the film along quickly without any dead spots. The inventiveness that Pat put into the dance numbers is incredible and contributed in a major way to the success of the film.

Making the image extremely sharp was part of the visual style that we set out to achieve. We purposely did not put any filters in front of the lens. We had experimented early on with trying both the soft effect (as if it were a memory) and the very crisp effect. Frankly, Allan Carr liked the old-fashioned sharp look so much that we decided that we would give it a go and find out whether or not the public would react to that look again. I did try other things in the beginning, but none of them seemed to satisfy the memory he had of what musicals used to look like, so it was at his urging that I put that crisp look on film.

We had to be very careful, because a lot of musicals have come out lately that have tried everything and failed. Making

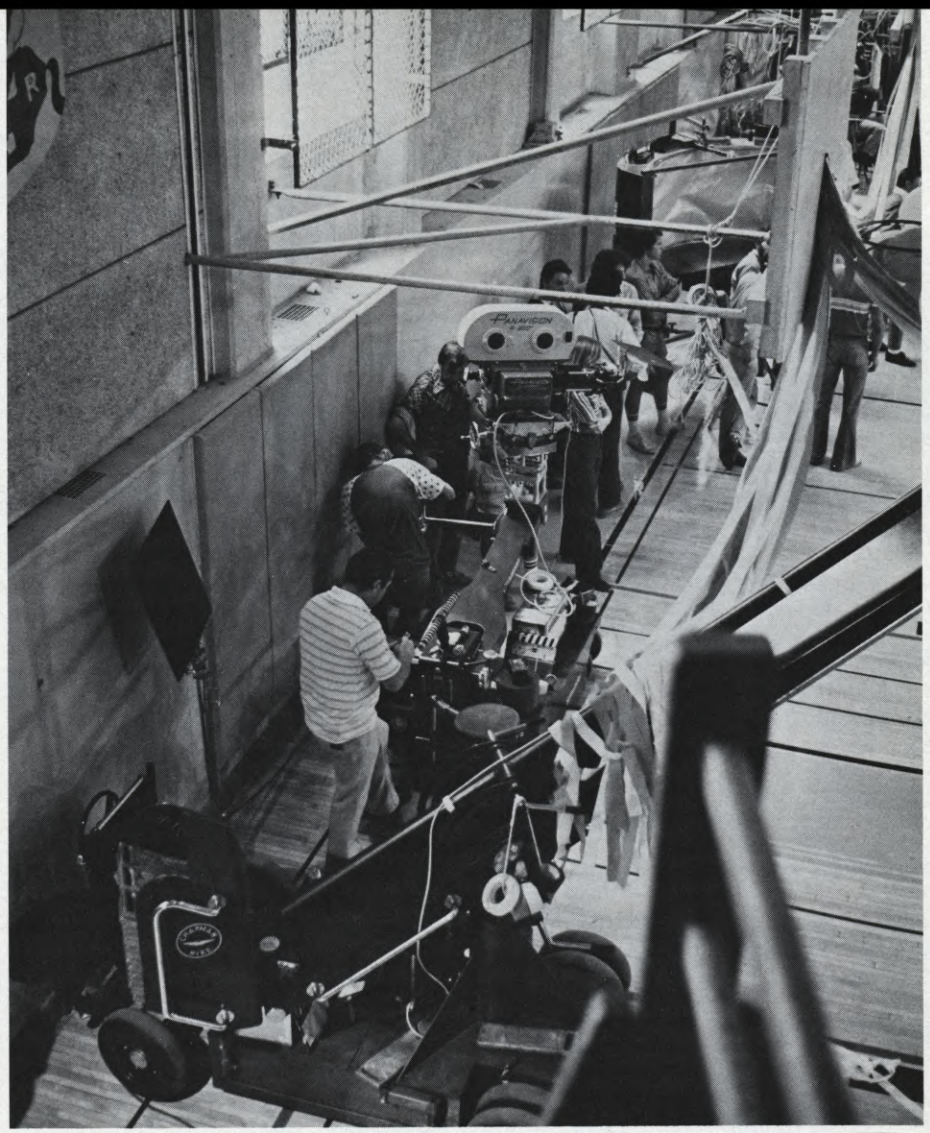
Dressed in their "GREASE" T-shirts, crew members prepare to film the National Bandstand dance contest sequence. Bill Butler (right) dispensed with filters and diffusion for this picture, opting for the "old-fashioned" crisp look, plus the bright, cheery colors which characterized Hollywood musicals of the past. A considerable gamble in these days of diffused, desaturated photography, it paid off here.

any film is a huge gamble and everyone in this business is a gambler. A lot of cameramen wouldn't want to take the gamble to go sharp, to go for the old-fashioned crisp look. In this business, it's dangerous to your reputation if you don't succeed—but in this case, it seemed to be the proper choice, and that's really what the cameraman's challenge is all about. It isn't just a matter of coming up with something different. (That's a challenge, too, and I enjoy it.) Your challenge, in the larger sense, is to get the proper look for the film you are making. I feel that the proper choice, in the case of "GREASE", was to go the way we went—to go bright and cheerful and remembering the day perhaps a little more colorful than it really was, rather than as murky memory.

To explain further my remark that it's dangerous to go for a crisp, old-fashioned look in photographing films today, let me say that in the past ten years cinematography has been influenced by many things: by television, by commercials, by more experimental cameramen working—and the choice of style, more often than not, has been toward a very soft, muted color. The "Kodachrome look" or the old "Technicolor look" has been out of vogue for some time. To go against that trend, in my opinion, requires some nerve, but that's what this business is all about. If you accept a challenge and decide to go against the trend, you've got to have the steel for it.

Crisp photography makes it harder for a cameraman to flatter the people in front of his lens. The characters portrayed in "GREASE" are very young, but the actors and actresses portraying them (except for the chorus) weren't all *that* young. Many of our leading actresses need a lot of help photographically. Even Olivia Newton-John, as young and beautiful as she is, has to be photographed very carefully. I've found that every actress has some physical characteristic that she doesn't want to show on film. In the case of more mature actresses, the lighting must be done with great care in order to make them look younger and attractive. In photographing "GREASE", this required a lot of work and attention (which I hope is not evident in the film), but I enjoyed doing it. I enjoy photographing women and I try to do it well—but it's not always easy.

The most difficult challenge in photographing "GREASE" stemmed from the fact that it was shot on location, which is unique for this type of film. To try to shoot a musical on location and make everything look beautiful is really asking for trouble. You are at the mercy of the weather; you are shooting outdoors a lot, and you don't know whether the sun is going to shine or whether it is going to be overcast. On top of that, you have long and difficult dance sequences to match. The challenges were many and great because of those factors.



Setting up in the high school gymnasium. Ordinarily Butler might have augmented the natural daylight with HMI lighting, but since the windows could be easily draped, he elected instead to use tungsten light provided mainly by 10K units set to beam sources from all four corners of the gymnasium. This provided effective overall lighting, with few changes necessary.

If I had been in a studio, where all of the conditions could have been controlled, I wouldn't have had to deal with weather. But when you have to cope with weather, you have to be very versatile. You have to be inventive in order to get your scenes shot and match them up—plus, at the same time, capturing the "look" that you are after. These are difficulties which no one who goes to see the movies should ever be aware of, but anyone who makes film must know about the mammoth problems that you can get involved in when you have a football field full of carnival equipment, literally hundreds of dancers, plus all of the other people that have been brought in. Considering the pressures that exist on a production day like that, the amount of money that is involved in every minute it takes you to pull whatever magic out of the hat you can, plus the weather, it requires nerves of steel in order to keep everyone in a positive mood.

Much of "GREASE" was shot with dancers doing numbers over and over again. I have no idea how they maintained their physical stamina. To take even a few minutes to adjust something put tremendous pressure on me, because I realized what I was doing to everyone else in the show. Inspite of that, you still have to get the job done, and when you have to add arcs to make a scene work in the daytime, or when you have to do any major lighting (and everything in this picture was *major*), you have to do it as fast and as efficiently as you can.

Colin Campbell is my gaffer and he is excellent at getting things done quickly and well. We had a major sequence to shoot in the gymnasium of a high school (the National Bandstand dance contest that is shown in the film), and it was quite a large area, with a second-story balcony

The filming of "GREASE" included several night exterior sequences, including a night football game. Most of the sequences in the picture were staged on a big scale, which required the most meticulous pre-planning. Aware that any delays on a picture of this scope would cost enormous amounts of money, Butler and his gaffer and key grip worked as far ahead as possible, so that everything would be ready at the moment of shooting.

around it. We wanted to light this in such a manner that we could go in and shoot all day long without making major changes, and we wanted to get in ahead of time in order to do that. But as fate would have it, someone decided to refinish the floor a couple of nights before and whatever they put on the floor would not dry, so we were unable to get in there until the night before we were scheduled to shoot. This put tremendous pressure on the gaffer and myself, because we had wanted to see what it would look like in advance so that we wouldn't have to make adjustments once we were in there.

The ability of Colin to handle problems like this—to get the lights up and make the adjustments and capture the look that he and I were happy with before we started shooting—is really, in large measure, the key to the success of the big numbers in the film, and nearly *everything* was a big number.

For the sequences shot in the studio, we had control, but the key to success there was the same as in the gymnasium—namely, to go in ahead of time and decide what you were going to do. Pre-planning is really the only way that you can make a picture of this size. The moment of truth comes when you stand inside a set or a given location and look around and say, "Alright, here's what we're going to do." That's the moment when you roll the dice, because once you decide upon a philosophy and a way to go about your lighting, you have to live with it and make it work. Aside from minor adjustments, you're not going to be able to change it much, because, from the financial standpoint, it just isn't feasible to have a crew pull everything out and put it back in again.

In every case, on this picture, we were successful in deciding upon a philosophy of lighting and having it work. I believe that the show attests to the fact that the desired "look" was followed through consistently. While we did many different things in lighting—we didn't light all of the sequences the same, by any means—the gaffer and I tackled each problem separately and tried to do something unique.

In the case of the dance contest sequence, which was shot in the actual high school gymnasium, we used a combination of hard lights, softening them a lot and throwing them a long way. We went for a kind of "four-corner" lighting scheme in that instance, in which each of the four corners of the room became a major light source. The philosophy behind that approach was that no matter in what direction we shot, one side would become the key and the other side would become backlight. If you do that from all four corners with a major source of light, you can just about shoot all day long in a set and always have an interesting kind of light. That wasn't the only kind of lighting we did in that room—we supplemented it at times—but it formed the basic plan.

In a set like the gymnasium it would have seemed logical to use HMI units—and I love to use them—but since we were able to enclose the set completely, we decided to stay with warm light. We used 10Ks in the corners and supplemented them with other lighting units as needed. We did soften the 10Ks so that the light was not harsh. If you throw those big lights a long distance they will soften themselves, but you will lose intensity. It's a question of how far you are going to throw them and how much you'll need to soften them. In this case, the lights were not so far away that we didn't need to soften them. We did this by putting material in front of the lights so that they started off soft, but the material didn't diminish their intensity very much.

(LEFT) Butler lines up a low camera angle, with the Panaflex almost at floor level. (RIGHT) He confers with the dancers to set their action patterns prior to filming one of the fantasy sequences. Having photographed many musical productions during his television days in Chicago, he found that experience invaluable in shooting "GREASE". He gives much credit to choreographer Pat Birch for her flexibility and willingness to restage action to suit the demands of the camera.

We had other sets that were entirely different—the fantasy sets, for example, which were an invention of mine before the director and choreographer were hired. Going back to the origin of the film and the way that it came about, a lot of that philosophy did fall on Allan Carr and myself when we were faced with the necessity of making such plans. At the same time, the writer, Bronte Woodard, was writing the screenplay and trying to pull it all together before we started shooting. I felt that if we were going to get something of the old film musical feeling into the picture, there should be two fantasy numbers. They were invented out of that kind of logic—to give us something to shoot in the old musical style. Again, it is unusual for a cameraman to make a contribution toward how a show should be structured, but, in this case, I had the opportunity to do a lot of that and I'm quite delighted that the film is so successful, because I put a lot more into it than pictures.

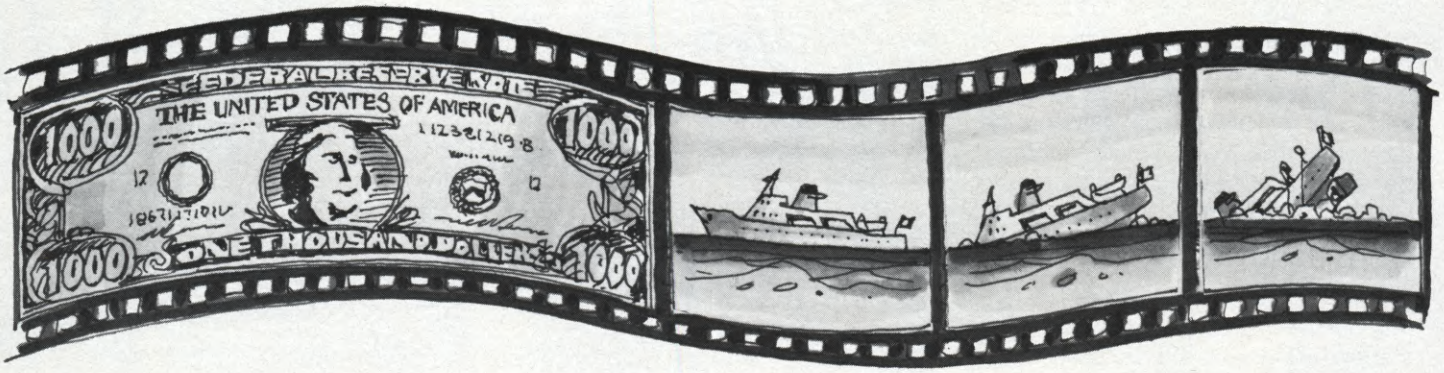
In both fantasy numbers I chose to go to a somewhat different lighting concept, in order to take it out of the reality of the other context. Those numbers are softer in their look, not because of the lenses, but because of the nature of the light. There was no direct light. All of it was bounced in order to bring everything in as soft as possible and give the scenes a kind of no-space feeling. The sets were placed against seamless backgrounds that appeared to have no walls and we fogged in the floor with dry ice fog, although we didn't make a big thing out of it. Because we worked totally with bounce light, there was very little shadow and everyone stood out in a kind of spaceless atmosphere. This style was quite contrary to the way we lit everything else. The only thing that was changed, however, was the lighting. We still shot both fantasy numbers sharp, but with a different feeling to the light. The consistent sharpness helped the audience make the transition into a dreamlike number that they could accept. The transitions into these numbers were critical, and if I harped on anything to the people working around me during that time, it was that the transitions should be properly motivated and done so smoothly that the viewers wouldn't be jolted by what they were seeing.

The director, Randal Kleiser, was experienced in working with film for television, even though he had never directed a theatrical feature. He and John Travolta had worked together on "THE BOY IN THE PLASTIC BUBBLE" and relationships like that between a director and an actor are very important. One of the key elements that Randal contributed to the show was his ability to work with young people, because he himself is quite young. He had a good rapport with them. This is an important element, because an older generation can't always get on the wavelength of young people, I've noticed. Like other young directors I've worked with, including Steven Spielberg, he has a fine imagination and a lot of excellent ideas. He also has a respect for the people who know how to do things and a willingness to learn, all of which works in his favor.

I've mentioned the importance of preplanning. As far as I'm concerned, that begins as soon as the locations have been selected. When that has been done, I go out to the locations with the major people I work with—Colin Campbell, my gaffer and George Hill, my key grip—and we plan where things are going to go and how we're going to light the show, because the three of us may never get back to that location together until the day we shoot there. If there are windows that have to be blacked in (for a night effect), or if we have to 85 or gel them, George Hill will take notes and have frames built to fit over them so that when the time comes they'll go up fast and we'll be ready to go. The same goes

Continued on Page 796

A giant crane was brought into play to film the action of the carnival finale. (ABOVE) The boom arm sweeps close to the ground just ahead of the dancers. (BELOW) The boom arm soars high above the dancers to provide a different perspective on the action. In one case, a dancer doing flips pinned his leg in the crane, but fortunately was not seriously injured.



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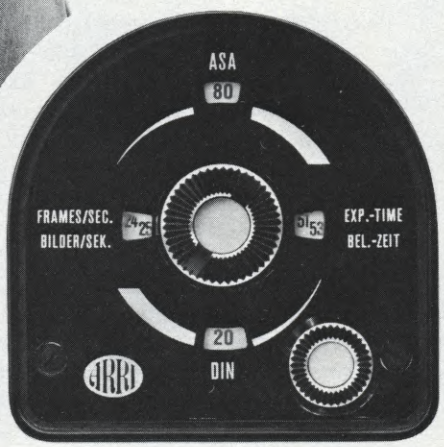

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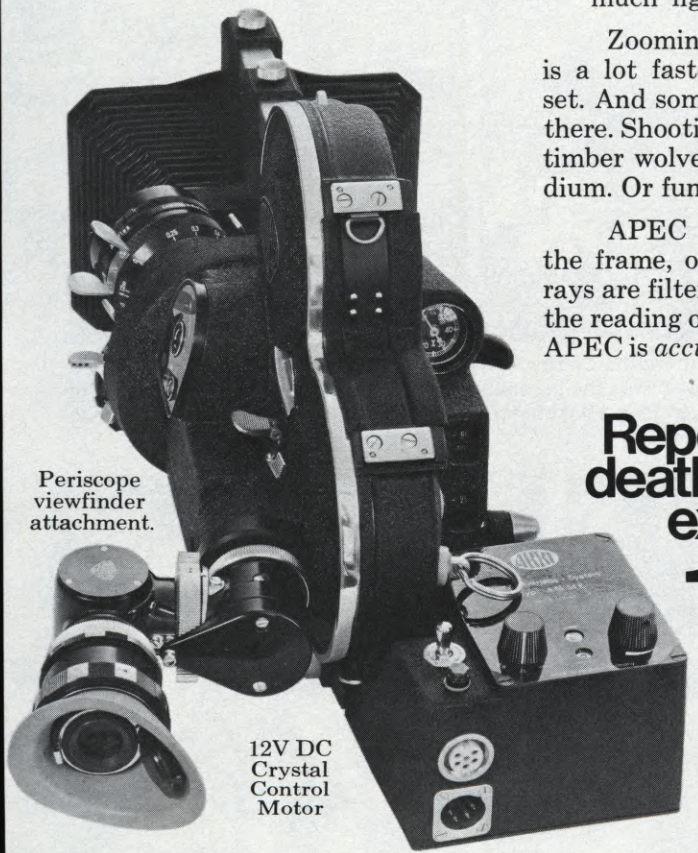

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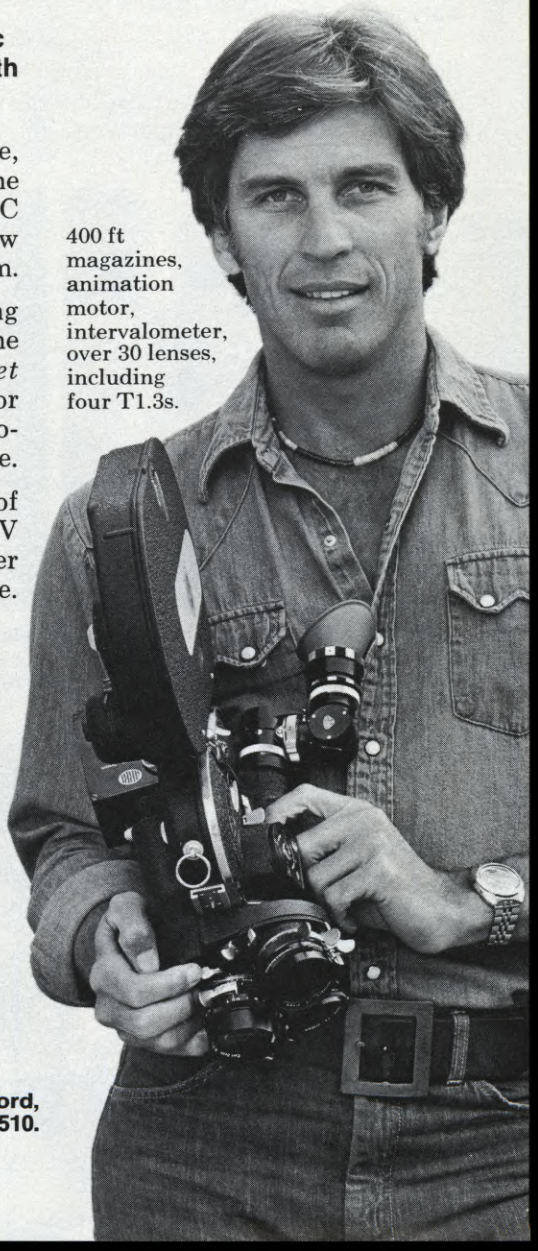

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THE ELEVENTH MOTION PICTURE SEMINAR OF THE NORTHWEST

Seattle's friendly, dedicated film community outdoes itself in assembling a program of fascinating topics and outstanding speakers to highlight its annual Seminar

By HERB A. LIGHTMAN

On the final evening of the two-day (June 2-3) Eleventh Motion Picture Seminar of the Northwest, held in the Playhouse of Seattle Center, I was called to the podium by Moderator Art Coburn to "say a few words", and those words, as I recall, went something like this: "Few things in life get better each year—except, perhaps, for wine and women—but one of them is this Seminar. I have had the pleasure of attending this event for the past six or seven years and each year it has grown progressively more interesting and more important as a forum by and for filmmakers. This year's Seminar, I can say sincerely, is the best yet. Keep up the good work."

And from start to finish it *was* the best—excellent speakers, most of them experts in their fields, and almost all of them well prepared with film clips, slides and other audio-visual materials to illustrate their talks.

The festivities actually began the night before with the traditional "sunset cruise" that is held every year to give those attending the Seminar the opportunity to socialize informally with the speakers prior to the actual program. A full boatload, serenaded by a live band, cruised Puget Sound to Blake Island State Park where, in the Tillicum Longhouse (an authentic reproduction of a meeting lodge constructed by Northwest Indian tribes), they dined on the succulent barbecued salmon for which Washington State is famous.

Having served as Moderator for the Seminar twice in years past, I was able to simply sit back and enjoy it this year, relishing the reunion with such Seattle friends as Laszlo Pal, Les Davis and Jeannie Reichert. Present, also, were several good friends from Hollywood, including Vilmos Zsigmond, Doug Trumbull, Warren Miller, and Verna Fields.

Space limitations preclude in-depth comment on each and every speaker's presentation (all of which were excellent), but I should like to comment on some of those which I found to be especially interesting or unusual.

"TUTANKHAMUN: MASS EDUCATION AND ENTERTAINMENT"—

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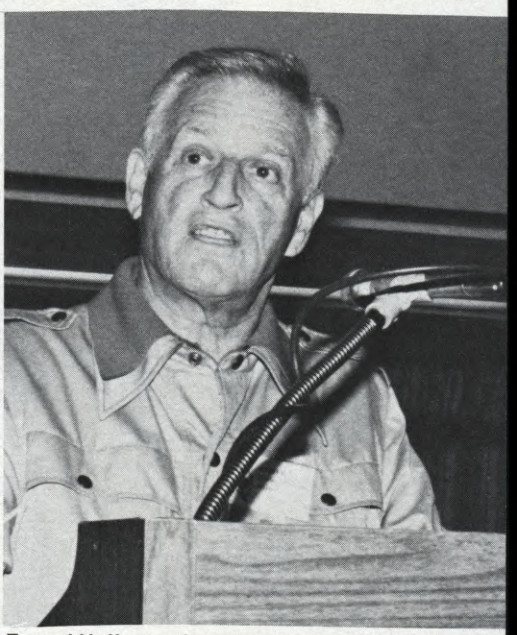
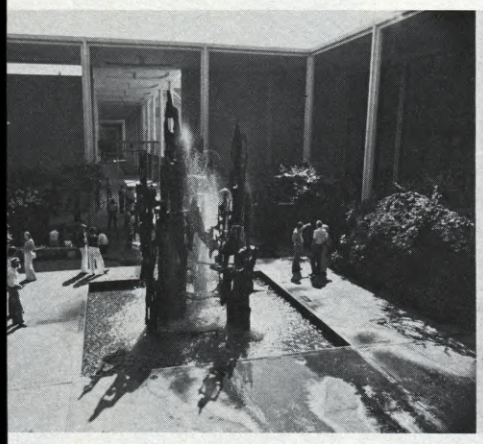
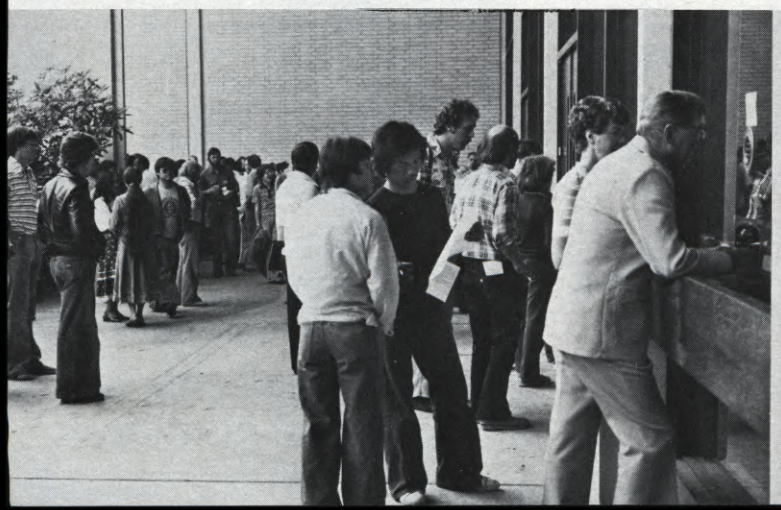


Famed Hollywood producer/director Stanley Kramer, now a Seattle resident, gave an interesting, amazingly candid talk as keynote speaker at the packed Seminar luncheon.

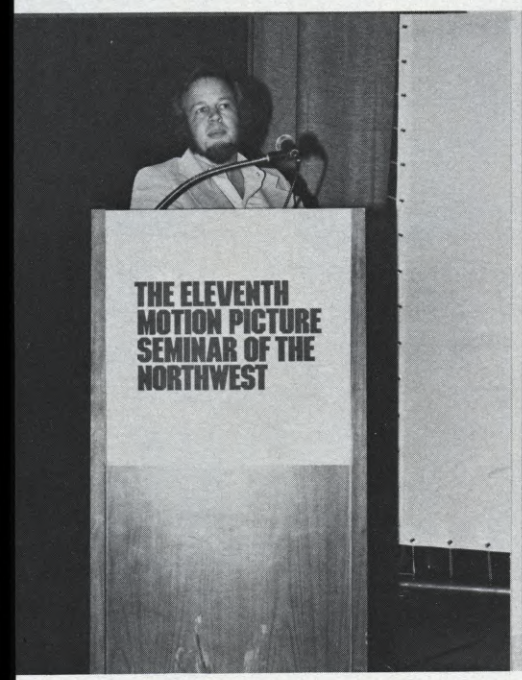


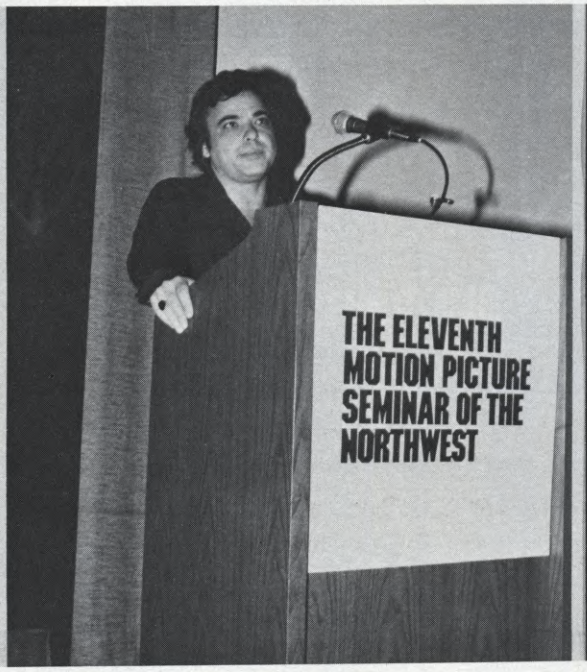
(LEFT) Early arrivals help themselves to stand-up breakfast in forecourt of Seattle Center Playhouse. (CENTER) The auditorium filled rapidly with a young crowd anxious to hear the speakers. (RIGHT) A "sell-out" was the luncheon held in the spacious Exhibition Hall of Seattle Center. (BELOW LEFT) Those who registered early were lucky enough to get tickets for all of the Seminar events. (RIGHT) Break time in the Playhouse forecourt.

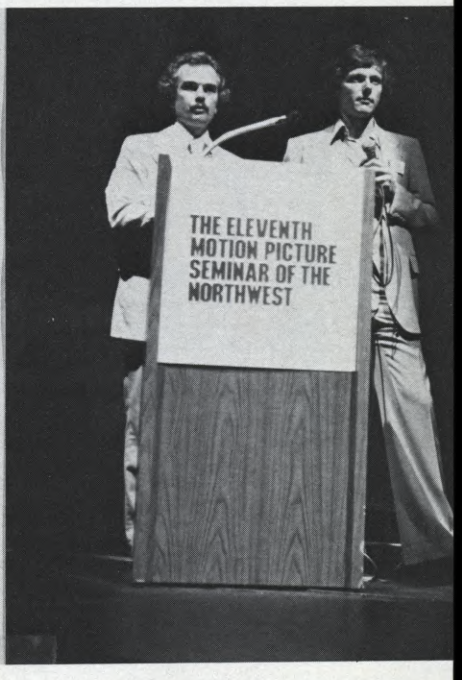


(LEFT) As in past years, the foyer of the Playhouse served as an exhibition hall for motion picture and video equipment displayed by more than three dozen of the top manufacturers and distributors of such equipment in the world. (RIGHT) Abbott Sydney, of Arriflex Corporation of America, shows underwater housing for Arri camera to interested spectators. Exhibitors consider the Seminar one of their most important opportunities to make direct contact with filmmakers.

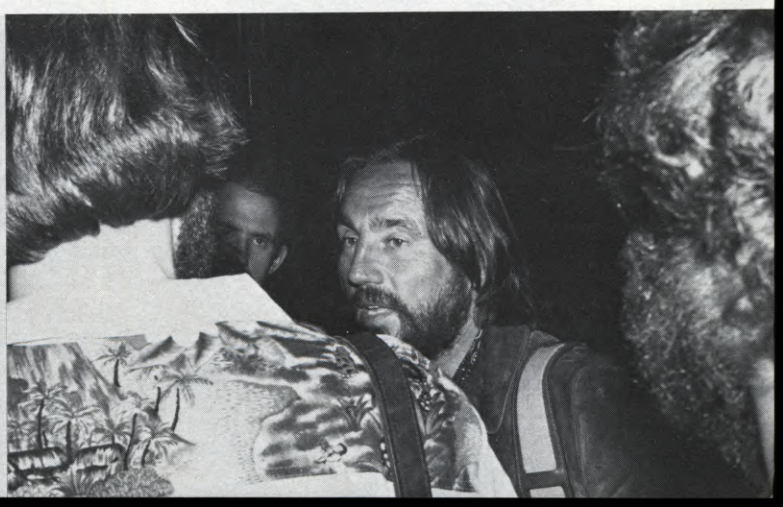
The roster of speakers included much high-powered talent from Hollywood. (LEFT) Douglas Trumbull, special effects wizard on "CLOSE ENCOUNTERS OF THE THIRD KIND", discusses that film and hints at a new motion picture format his company is developing to revolutionize film presentation. (CENTER) "JAWS 2" director Jeannot Szwarc discusses the trials and tribulations of getting the sequel onto film in the face of formidable obstacles. (RIGHT) John Dykstra, Academy Award-winner for "STAR WARS" special effects, had to cancel appearance because of involvement in plane crash. On very short notice, two of his colleagues, Jamie Short and Robbie Blalock, flew to Seattle to pinch-hit for him.







(LEFT) Douglas Trumbull and Jeannot Szwarc hoist a brew and chat backstage at the Seminar. For the many Hollywood people who attended, as well as for the author, the annual event is in the nature of a reunion with old friends within the industry. (RIGHT) Following his talk, dynamic cinematographer Vilmos Zsigmond, ASC, Academy Award-winner for his photography of "CLOSE ENCOUNTERS", was mobbed by young filmmakers eager to ask him questions.



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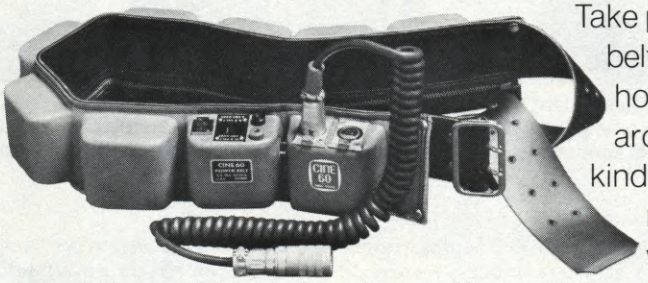

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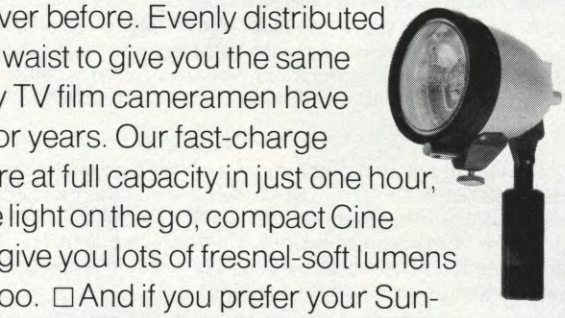

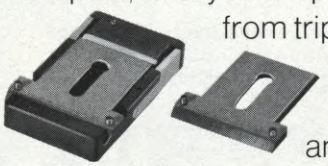

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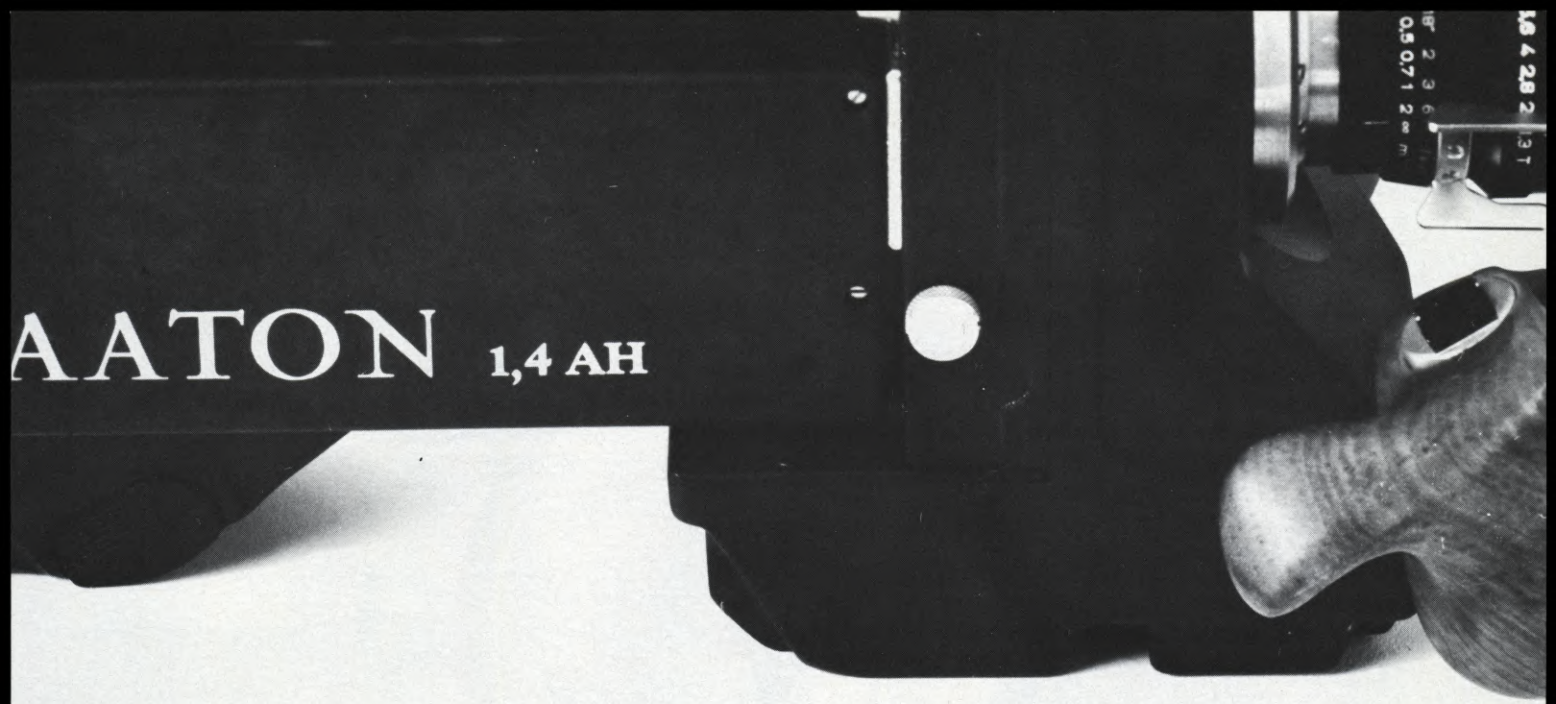

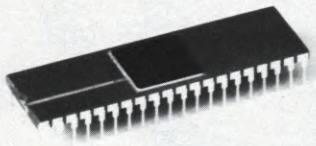

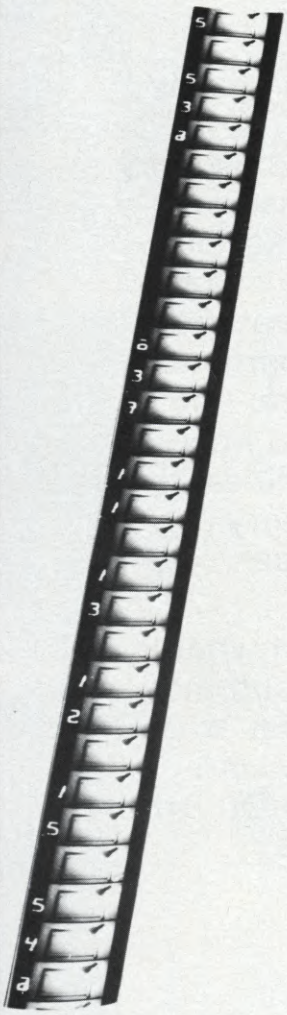

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Mention the word Detroit and most people conjure up mental images of enormous automobile production lines with familiar logos of Ford, GM or Chrysler flashing in the background. These images of Detroit are common to most everyone whether they have ever been to "Motown" or not. That's because they have seen thousands of images of production lines and test tracks in television commercials selling cars and trucks. And these thousands of commercials and industrial films support one of the largest film production communities in the country.

To service this growing film community, Victor Duncan, Inc., the professional motion picture equipment company, recently constructed a new, expanded facility in the Detroit suburb of Madison Heights. The custom-designed building more than doubles the size of their previous location. Along with the increased size of the facility, Duncan has increased equipment inventories to meet the needs of Detroit and Midwest area producers.

Of special interest to area filmmakers are the new lighting inventories, which include everything from Teenie-Moles to the new HMI lights. New custom-modified grip trucks and "super-quiet" 300-amp and 450-amp mobile generators will provide added convenience for producers on locations.

To introduce Detroit and Midwest filmmakers to the new facilities and ser-

Continued on Page 788

(LEFT) Ed Clare, of Cinema Products Corp., demonstrates the Academy Award-winning Steadicam. Mounted on the Steadicam is the new MNC-71CP color video camera, now distributed throughout the Midwest by Victor Duncan, Inc. (RIGHT) Jack Teahan, Audio-Visual Specialist with Eastman Kodak, discusses post-flashing Eastman film with the capacity crowd at the Victor Duncan, Inc. Motion Picture Equipment Symposium.

(LEFT) A portion of the more than 200 visitors who attended the Victor Duncan Detroit Open House and Motion Picture Equipment Symposium. These visitors came from seven states, with many coming from as far away as Maryland and North Carolina. (RIGHT) Victor Duncan introduces Holmes Ives, of Magnasync/Moviola to attendees at the Detroit Motion Picture Equipment Symposium.

1980 AND BEYOND—THE EXPANDING HORIZONS OF THEATRICAL FEATURES

Despite rapidly escalating production costs, Hollywood film executive forecasts an amazingly bright future for the feature motion picture

By GORDON STULBERG

I think it might be interesting and provocative to describe where the theatrical motion picture business has been in the last 25 years, where I think it is now, and where I think it will be going in the next two decades.

I want to begin with 1950, because in the year or two prior to that the theatrical motion picture industry had reached its zenith in terms of the total percentage of American dollars spent on entertainment—some 19% during the years of 1947, 1948 and 1949.

In 1950 two catastrophic happenings took place. One of these was the introduction of commercial television, which brought visual entertainment into the home without charge—and began what appeared to be the inevitable demise of attendance at the neighborhood movie. The second catastrophic occurrence was the suit by the Federal Government, in 1950, to separate the motion picture companies from their theater holdings. Up until that time, companies like 20th Century-Fox produced their films, distributed their films and exhibited their films primarily in their own theaters.

From 1950 on, all of the motion picture companies were required to divest themselves of their theaters and the subsequent owners or buyers of the 15,000 to 16,000 theaters that existed at that time then had a free market. They had a right to choose or reject the product offered by 20th, Warners, Metro and the other majors of the time. Therefore, the ability to grind out 30 or 40 pictures at a large edifice on Gower Street or Pico Boulevard was severely constrained—first, by the fact that the studios could no longer produce "MA AND PA KETTLE" or "LOVE FINDS ANDY HARDY", because audiences were getting the same thing at home without charge. Secondly, even if they did produce "MA AND PA KETTLE", they couldn't put it into their own controlled theaters because there were new owners of those theaters, and if they didn't want "MA AND PA KETTLE", they could go to another supplier of product.

For the next 15 years economic conditions in Hollywood deteriorated enormously. Studios substantially pared their overheads, they eliminated operating departments (such as electrical, transportation and camera), they cut out their contract players, they eliminated their contract directors and, as economic events foretold what was going to happen, box-office grosses dropped from $1,600,000,000 to about $900,000,000. Attendance declined even more catastrophically, because admission prices crept up and, by dividing those higher admission prices into the lesser box-office income, it became obvious that there were fewer and fewer people going to the movies. Also, only part of that slack, as far as Hollywood was concerned, was picked up by television. Television grew rapidly during that period, but in terms of the costs of running studios and maintaining stages and administrative staffs, television created only a minor dent in the economic problems which prevailed at that time. This, parenthetically, was the period when I was becoming increasingly involved in the executive echelon of the motion picture business.

At the same time—and obviously, it followed—motion picture theaters began to drop by the way. A combination of the move to suburbia and the impact of the competitiveness of television reduced the number of theaters from about 16,000 to about 11,000 at the absolute bottom of the cycle, which was reached between 1966 and 1970. However, in 1971 and 1972, we began to see a resurgence in the industry. The momentum increased and, especially during the last two years, we have witnessed an extraordinary rise in box-office income and attendance at the movies.

This turnabout has been the result of several factors, including the willingness by the motion picture companies to gamble many, many millions of doliars on so-called "catastrophe" pictures (beginning with "THE POSEIDON ADVENTURE") and culminating in larger and larger films, as exemplified by pictures like "STAR WARS" and "CLOSE ENCOUNTERS".

It also became apparent that the preoccupation with television as an entertainment medium was beginning to wane. Not that television revenues and audience viewing were not extraordinarily high (viewing averaged six-and-a-half hours a day for Americans), but because people were turning increasingly to the idea of being able to go out and see, and become involved in, an entertainment that was not otherwise immediately available on the television screen. This phenomenon—partly luck, partly a change of philosophy within the studios, partly a better utilization of the advertising media—has brought more and more large films to the attention of the public. We've had a run of extraordinarily profitable films and tremendous attention is being paid by the American public to motion pictures.

For the first time, last year, income at the box-office got back to where it was in 1949. It slightly exceeded two billion dollars, and it is estimated that it will approach two-and-a-half billion dollars this year. Theater construction, during the past several years, has been on an extraordinary rise. We have fewer drive-ins today, but the multiplexing of theaters has made it possible to go to centers in some cities in the United States and abroad, where there may be three, five, seven or eight theaters in a single area. These theaters, which usually share a large parking lot with a shopping center, can accommodate all the cars that transport audiences for an evening at the movies. Most significantly, these multiple theaters make a much more economical use of the available space. Instead of a single 1250 or 1800-seat theater, there may be three theaters with 200, 500 and 900 seats respectively. The 200-seat house would be filled with people interested in seeing "THE DISCRETE CHARM OF THE BOURGOISIE". "THE TOWERING INFERNO" might be showing in the 500-seat theater, or an audience could go to the 900-seat theater (which is equipped with Dolby sound) and enjoy the sensations produced by a picture like "CLOSE ENCOUNTERS".

Now, where is that trend taking us, in terms of the motion picture business as we know it today? First, let me postulate that an amazing thing has occurred as a counterpart of what is happening at the theaters. Some 10 or 11 years ago, when the American Film Institute was founded (which is a major academic learning center in Beverly Hills for young filmmakers), there were in the United States perhaps 300 to 400 institutions teaching film. Today there are well over 1,000. The A.F.I. puts out a book on film instruction available in the United States and it looks like a telephone directory; it's almost too heavy to lift. It has become increasingly clear that the generation that was weaned on that box in the living room now wants to make the Great American Film. They no longer want to write the Great American Novel.

As a result—whether it is in Seattle, Chicago or New York—you find young men and women increasingly committed

to film on an emotional level. We in Hollywood are the beneficiaries—as, ultimately, the viewers of film will be—of that preoccupation and interest and, perhaps, *obsessiveness* with being involved in the filmmaking process. We can conceive that, within the next decade, there will be not hundreds, but thousands of filmmakers knocking at the doors to get in and make film—to storm the walls and open them up, as they are now starting to do.

I found it incredible to see, during the American Film Institute's 10th Anniversary celebration at Kennedy Center, George Lucas, Steven Spielberg and Francis Ford Coppola all there together. If you figure their average age and divided it into the gross film rentals of their pictures, the result is practically equal to the gross national product last year. It was equally incredible to me that, on that occasion, I sat next to the Secretary of State, with two Cabinet members sitting in front of me. The attendance list read like a Who's Who of Washington politics. Again, the lightning rod was the growth of interest in film.

Let me talk about the future of the theatrical feature. The objective is to bring interesting films to the American and, indeed, to the *world* audience. Half of our income still comes from abroad, and over 70 percent of the screens in every country in the world show American film. It is apparent to us that, while there are ultimately great rewards to be had from making and exhibiting films, the cost of producing theatrical features has been going up and up and up. To produce "ROCKY" today, for example, would cost in the range of three to three-and-a-half million dollars—and that's a film with an unknown cast, a relatively little-known director and a novice screenwriter. You go from there to Coppola's "APOCALYPSE NOW", which, I understand, has so far cost in excess of 15 million dollars and is not yet ready for distribution.

Now, where does that leave people who, like myself in the past, sit and wonder how much to spend to make a picture, to say nothing of the follow-up in marketing cost? It is not uncommon that, in order to produce the ten million dollars that the movie company gets back from the theaters in film rentals, it will have to spend an additional three million dollars or more for appropriate television spots, radio spots and newspaper advertising. It becomes quickly obvious that, in order to make the kind of theatrical features in which the American and world audiences have shown a broad interest, there are many complex problems of economics.

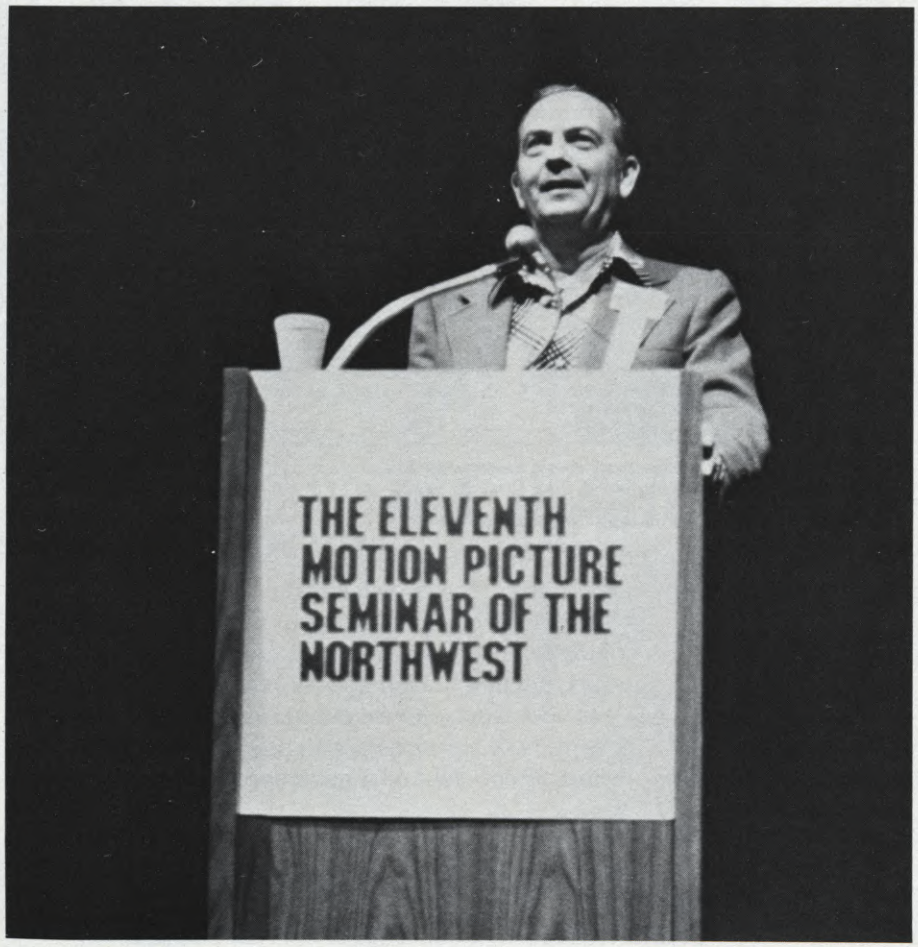
But there is a positive aspect to the situation. It is an incontrovertible fact that, for the first time, the feature motion picture has inherent values that make it, very often, an economically viable venture *even if the picture does not ultimately perform profitably at the box-office.* For one thing, networks today buy television rights to theatrical features at anywhere from two million dollars for two runs to 15 or 20 million dollars for three or four runs. When you make a large film these days with a Redford or a McQueen, it's a pretty safe bet that when that film goes to the network, it is going to command a multi-million-dollar price that can be applied against the cost of making the picture.

Then there is syndication—the sale of that film all over the world to individual TV stations, even in countries like Italy and Spain where the networks are owned by the government. A syndicated film of quality will produce upwards of three-quarters of a million dollars of additional revenue from local television buys. The popular films shown on the airlines produce additional revenue to the motion picture companies of as much as two or three hundred thousand dollars. Then there are the ancillary markets for 8mm and 16mm prints. There is also the market represented by local cinema groups at the various universities. I was involved with a picture called "LITTLE BIG MAN" some years ago when I was at CBS. That film, since 1969, has produced a million dollars in revenue just from showings on college campuses.

Finally, and probably most importantly of all, there is the area from which I think the feature motion picture industry is not only going to derive an enormous amount of income, but which will provide the economic foundation for more and more filmmakers to produce more and more films. That is the area of pay TV. Let me offer a few statistics. In 1972—just six years ago—there was not a single pay TV system in the United States. The first one was introduced in Mesa, California in the spring of 1972 and, for the whole of the first year following that, the income from the rental of film to pay TV equalled the magnificent total of one million dollars. Now, six years later, there are on pay TV cable systems more than 1,400,000 homes in America. The movie companies that own the films shown on these systems will, this year, earn 35 million dollars from pay TV. The projection for 1981 is 125 million dollars, and for 1985 it is

Continued on Page 816

Shown speaking at the Eleventh Motion Picture Seminar of the Northwest, held recently in Seattle, Washington, is Gordon Stulberg, a top executive of the Hollywood film industry during the past 20 years. In that period he served as President of Cinema Center Films, Vice-President and Chief Operations Officer of Columbia Pictures, and President of Twentieth Century-Fox.



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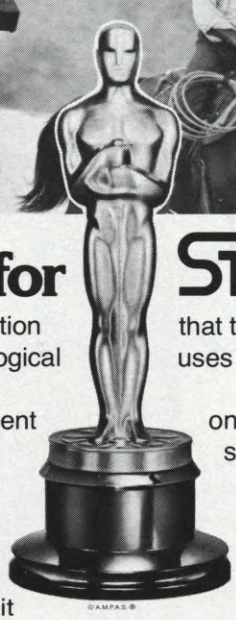

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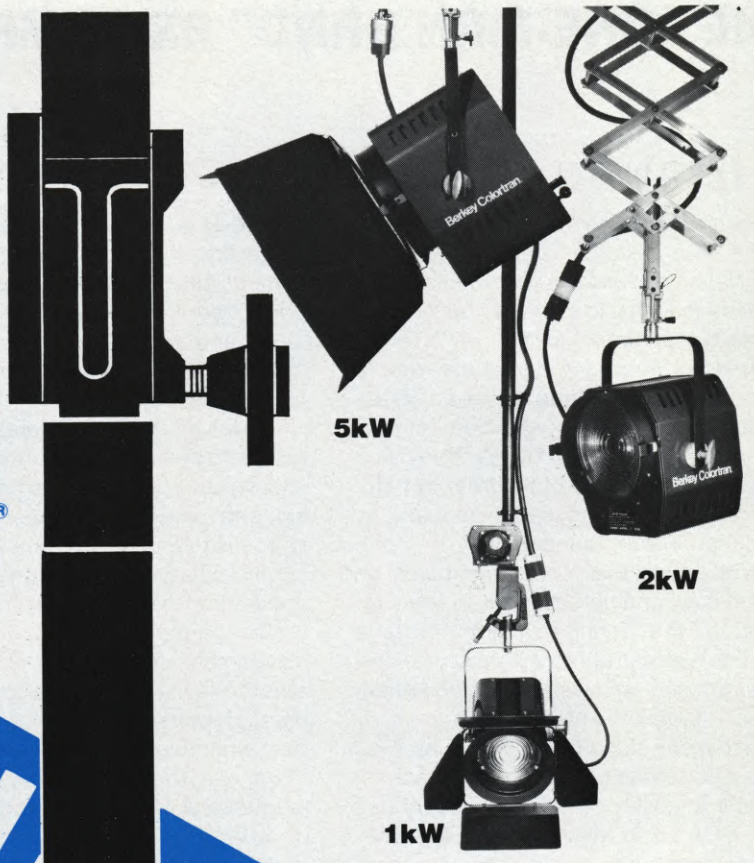

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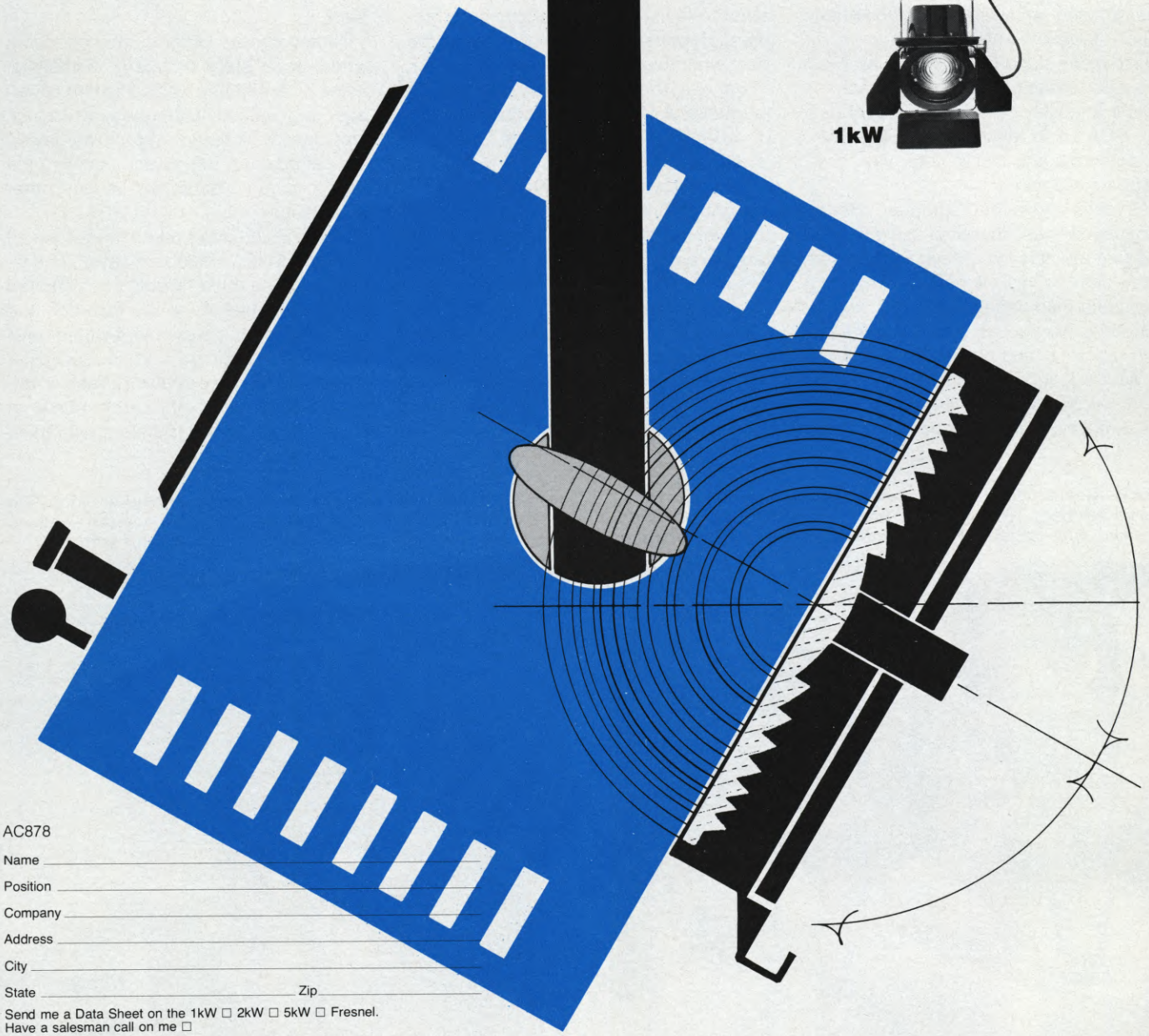

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THE "ONE-MAN BAND" AS COMPLETE PHOTOJOURNALIST

A two-time winner of the Television News Photographer of the Year Award, who shoots alternately with ENG and film cameras, achieves greater depth of coverage when functioning as reporter-cameraman

By DAVID BUSCH

Larry Hatteberg, KAKE-TV, Wichita, Kans., was selected by his colleagues in the National Press Photographers Association (NPPA) to receive the "Kodak Ernie Crisp Award" as the 1977 Television News Photographer of the Year. It was the second time in three years Hatteberg has been selected for this honor. He was also NPPA Television News Photographer of the Year in 1975.

The award is sponsored annually by Eastman Kodak Company.

With all of the recent emphasis on technology and personalities in news reporting, the naming of Hatteberg, a youthful veteran photojournalist who prefers working as a so-called "one-man band", is almost an anomaly.

Like many stations, KAKE-TV, an ABC Television affiliate, has joined the technological revolution. The station operates four RCA TK-76 electronic news gathering cameras, and can remote "live" coverage from a van.

As chief news photographer, Hatteberg usually has his pick of assignments and formats. It is interesting to note that every story in his winning NPPA entry was a one-man band assignment, where Hatteberg worked as a photojournalist, both reporting and filming the news.

"With all of the emphasis on equipment, technology and personalities in news reporting, the broadcast industry, or at least large segments of it, might be neglecting the most important component of all, the photojournalist," Hatteberg observes. "Telling stories with pictures and appropriate sound is what makes television different from any other news medium.

"However, in many markets, the trend seems to be towards the development of specialists, reporters who have no training and little understanding of photojournalism, and technicians who operate sophisticated electronic gear, but don't understand news," he continues.

Hatteberg works as a reporter on some assignments, and as a photographer on others. He uses ENG gear and film cameras. However, he believes he is at his best when working as a one-man band. "You are then the complete photojournalist, able to tell the story as you see it, with pictures and words," he emphasizes.

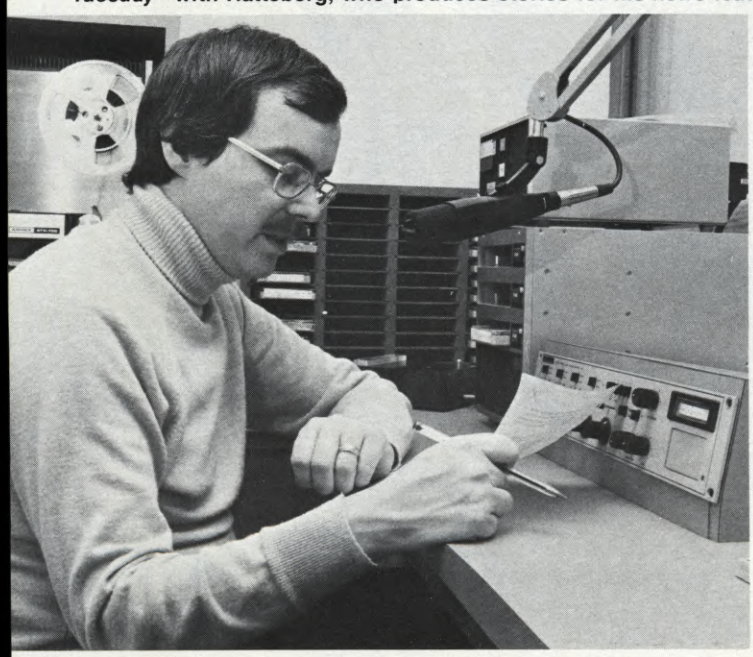
Traveling with Hatteberg on one assignment illustrates this point. It was an on-going story about the plight of local farmers who are plowing under their own wheat fields to dramatize their desperate need for higher prices. Hatteberg left his cameras in the car and spent 20 minutes listening to the farmers. By the time he was ready to film, he understood what they had to say: the farmers had sorted out their own thoughts, and trusted Hatteberg enough to express them freely. Also, the photojournalist had decided how to best illustrate the words with pictures.

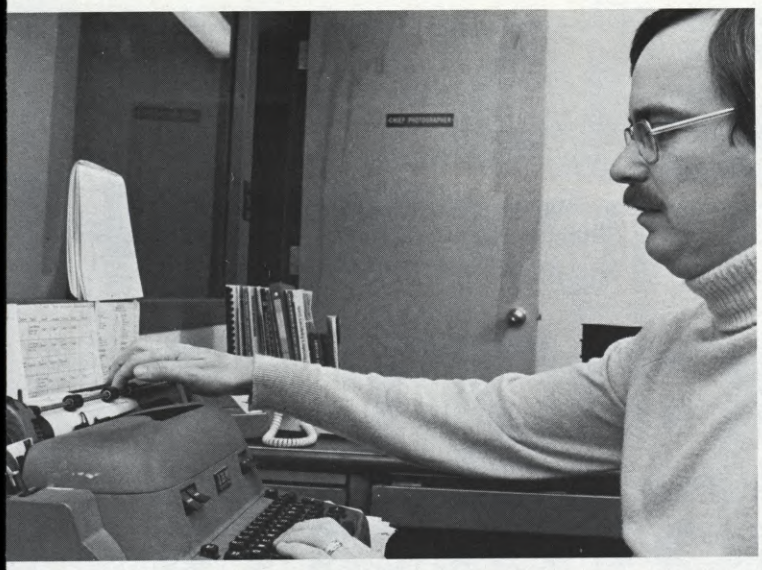
"Too many times, reporters take their subjects out of their environment, lean them up against a wall, and begin confronting them with questions," Hatteberg says. "If I'd jumped out of my car, asked one of the farmers to stand in front of his tractor and talk about the problems with the price of wheat, I would have made him very uncomfortable," he continues. "Instead, after we became acquainted, I let him go about his work repairing a plow, and filmed his answers as he did his work."

Hatteberg has covered the continuing wheat-price story on many occasions, using both film and ENG. His film coverage was spiced with unusual angles, provided by hopping onto plows, laying the camera in a furrow and allowing the tractor to run almost over it, and other techniques.

"There is no way I could have done all that with ENG," Hatteberg says. "The vibration of the tractor would have created an unstable picture on the recorder, and the weight of the equipment would have been a real handicap." ENG is used to get late-breaking news on the air faster. Hatteberg and other photojournalists at KAKE-TV also often transfer their film to

(LEFT) "Good audio tracks help smooth transitions in one-man band film reports," says NPPA Television News Photographer of the Year Larry Hatteberg. (RIGHT) Paul Threlfall, vice president and news manager of KAKE-TV, discusses an upcoming episode of *"Second Tuesday"* with Hatteberg, who produces stories for his news feature showcase, and appears on-camera to introduce his work.





(LEFT) As at home behind a typewriter as behind a camera, Hatteberg is a well-rounded photojournalist who is capable of covering a story in all of its various aspects. Working alone gives him a lower profile, which makes for closer cooperation from camera-shy subjects. (RIGHT) Hatteberg believes that tight editing moves even lengthy documentaries along at a faster pace.

videotape in order to use the electronic editing gear.

If ENG is faster to get on the air, Hatteberg feels film gives him the most freedom to tell stories in sequence, moving the camera around to provide lots of angles while recording location sound so important to the mood of the story. KAKE-TV uses Eastman Ektachrome video news film 7240 (tungsten), rated at an E.I. of 250, to provide low-light filming flexibility.

Hatteberg has been asked why, as a two-time NPPA "Television News Photographer of the Year", he hasn't moved on to greener, higher-paying pastures.

"Actually, the situation is quite the opposite," he replies. "We get a constant stream of applications from news photographers working in higher-paying East and West Coast markets who want to come here. The key is the freedom we enjoy, the ability to *not* be a specialist.

"Happiness ought to be worth something," he says, "and the greater satisfaction I find working here more than makes up the difference in pay that one might find in a larger market."

On either coast, he would have to confine his work either to reporting or photography, and wouldn't be able to do both. "Versatility is not only encouraged at KAKE-TV, it is demanded," he says.

"Eight of our people are photojournalists who can report as well as shoot film," Hatteberg says, adding that five other staffers specialize in hard-news digging that consumes too much of their time to allow doubling as photographers.

"Because we have so many combination photojournalists, KAKE-TV has a great deal of flexibility in covering stories, and can get a greater number of events covered in a given day," he says. "The bonus is a wider variety of work for our people."

As a dedicated proponent of one-man band filming, Hatteberg does seem to have found the perfect job. Born in a small town 50 miles south of Wichita, he built his own darkroom in the basement of his parents' bakery, and gained experience as a still photographer. After a year at Emporia State University, he applied at KAKE-TV in 1963 for a summer job that never ended.

"I kept bothering news manager Paul Threlfall until he hired me as a part-time lab man," Hatteberg recalls. "By the end of the summer, I was shooting film."

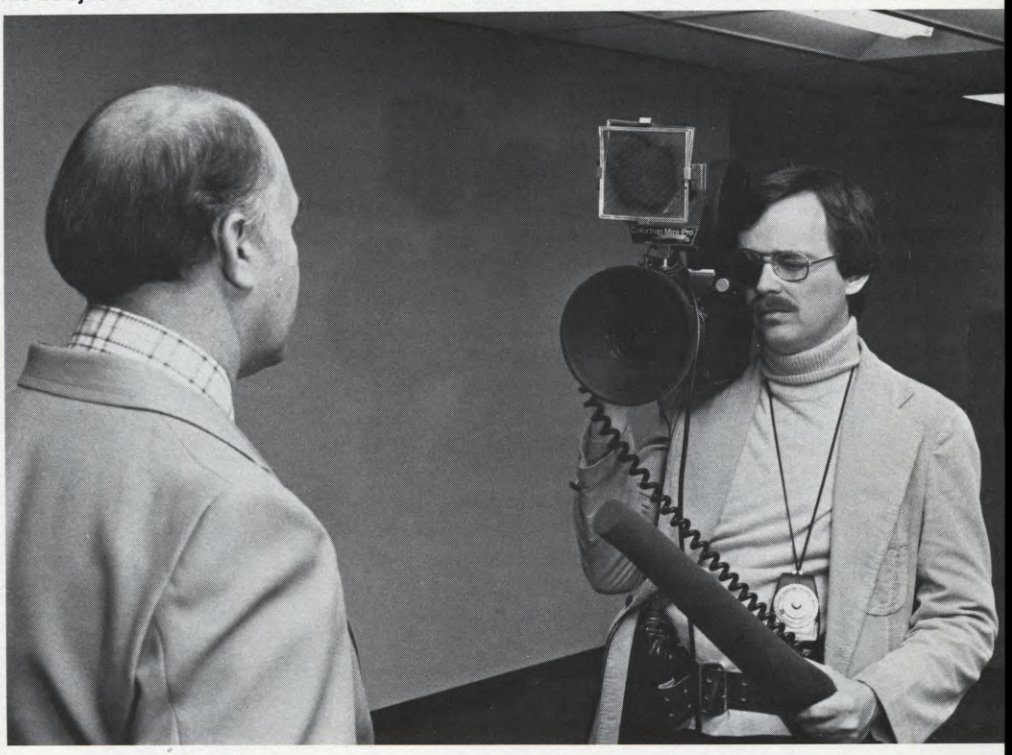
Threlfall, one of the pioneers of news film reporting, patiently trained the eager Hatteberg, developing the young photojournalist into a well-rounded news reporter.

Today, as KAKE-TV chief photographer, Hatteberg is free to specialize in the type of work he prefers.

"I don't have the temperament to go after the exposé," he says. "I prefer to

Continued on Page 817

For coverage of the opening of a new high school, Larry Hatteberg interviewed the school official in charge of the new facility. After a half-hour tour of the school, he brought out his camera and started filming. Working into the actual shooting gradually, he has found, puts his subjects more at ease and minimizes tensions.



A quick look at the Arriflex 16SR production camera system:

With your eye at the 16SR's eyepiece, you can frame, focus *and* set the f/stop. Fast.

Accurate readings

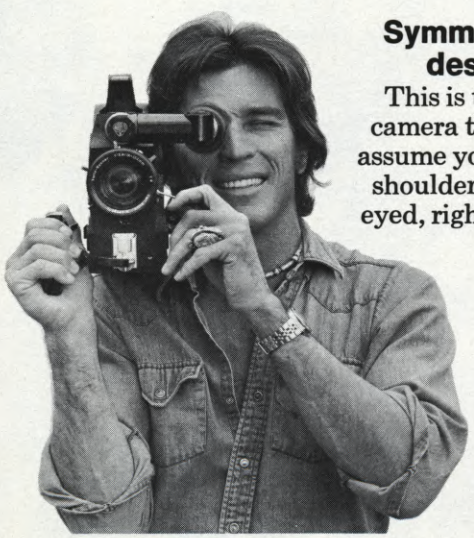
Through-the-lens readings tell you precisely how much light is getting to the film. ±2 stops, visible in the finder. Range is 24/25—80 fps, 16—500 ASA.

Fiber optic focussing screen

Its better light transmission makes viewing easier at low levels and small apertures. Less light scatter and no grain result in a sharper finder image with even edge-to-edge brightness.

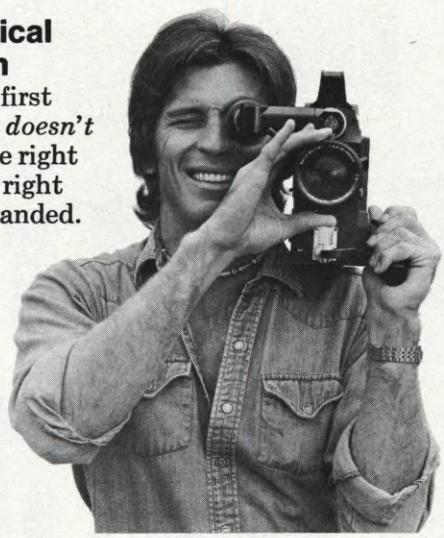
Automatic iris

With an auto-iris lens mounted, the 16SR stops the lens down to your pre-set f/stop when you switch on, and opens wide again when you switch off.



Symmetrical design

This is the first camera that *doesn't* assume you're right shouldered, right eyed, right-handed.



Four T1.3 Zeiss lenses, and 22 others

In addition to the four super-speeds, there's a choice of fifteen fixed lenses, including an Angenieux 5.9mm. And there are seven zoom lenses in the Arri steel bayonet mount.

Electronics & Crystal

At left are the 16SR's magazine and body. Inside the flat base are electronic integrated circuits for crystal sync, start-mark, off-speed light and slave operation.

Motor & speeds

The 12V DC motor is built into the body, just below the lens mount. No bulges. Off sync speed, a red light shows in the finder. There's a variable-speed accessory—5 to 75 fps.

Magazine changes without touching film

It takes about ten seconds. Snap off the old magazine, check the aperture, snap on the the new one. No threading, no loop to form.

That's all done when you *load* the magazine—which is also fast and easy. All you do

With 10-100mm Zeiss lens and 400 foot magazine as seen here, the 16SR is 15½ ins. long and weighs 14½ lbs. 3 feet from the film plane, sound level measures only 29 dB/A.

Video Monitor

Video adapter (visible on right side of camera) fits onto the 16SR easily, runs on 12VDC and works with most remote TV monitors.

in the dark: put the roll on the core spindle, slide the film end out, close the feed side lid. The entire loop is visible as you form it, in daylight.

Magazine locks

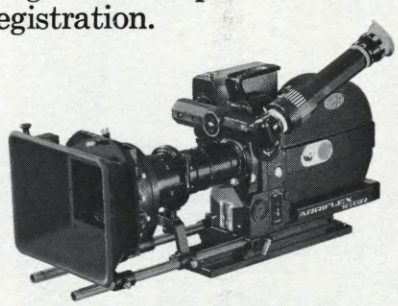
When you snap it on, the magazine is locked into place automatically, at *three* points. And its bottom rests against the camera's base.

Film channel bars

On each side of the aperture is a hardened steel guide-rail bar. They fit against the magazine's face plate, forming a fixed film channel. Only at the aperture does the film make contact with the pressure plate.

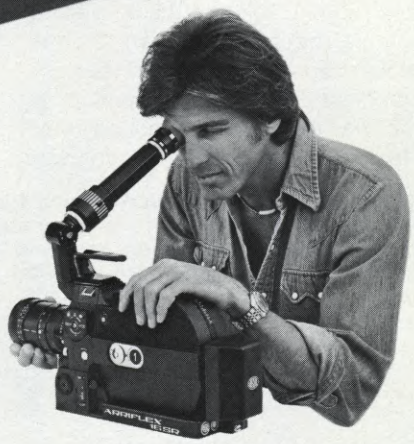
Register-pin movement

The 16SR uses a completely new compensating link film transport design with an independent registration-pin. Positive action control at *every stage* of film pull-down and registration.



Bridge Plate & Matte Box

Seen above, the 16SR is mounted on the Arri Bridge Plate, which is adjustable for balance. The Bridge Plate's rods are supporting both a long zoom lens and the 16SR Production Matte Box, which has two rotating 4 x 4 inch filter stages. Note also the 7 inch Finder Extension.



Versatile viewfinder and on-board battery

That's the battery, on the back of the camera. It drives about 2,000 feet. No cables. The finder rotates to left and right *and* it rotates 360° parallel to the camera's side. And the eyepiece swivels 25° *out* from the side.

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THE SOUND OF THE STORY

By R.E. UHLIG
Photo Technology Division, Eastman Kodak Co.

Due to the development of Dolby and other sophisticated sound systems, the aural aspect of film presentation is finally coming into its own

The sound of a high quality film is as good as the picture, right? Although we might expect this, we don't always find it true. Progress in sound quality has not kept pace over the years with other developments in the film industry, or with sound improvements in other fields either. Except for magnetic-stripe releases, which are available in relatively few theaters, the quality of film sound compares rather unfavorably with the high-fidelity sound systems found in many homes.

Eastman Kodak Company and Dolby Laboratories, Inc., made real progress in optical sound tracks in the 1970s, the first major developments in this specific area since the 1930s. "STAR WARS", "A STAR IS BORN" and "CLOSE ENCOUNTERS OF THE THIRD KIND" are among the pioneering films making use of these developments.

Capsule of History

Pictures in motion, the result of many inventions, became a great communications and entertainment medium. The greatest addition to this medium, of course, was the addition of sound in the late 1920s. Even though the sound was tinny and included a large amount of hiss, it was great to be able to hear what was also seen.

New technologies in recordings, in photographic sound tracks, and in the sound equipment of producers and theaters led to improved quality. This, however, revealed some unwanted sounds, including noise from film grain and from film abrasion. Sound engineers learned to attenuate high frequency signals to decrease such noise. The Academy Characteristic attenuation, or rolloff standard, was established in the 1930s. This and other advanced audio-engineering techniques produced on film the best sounds available at that time.

In the 1950s, the film industry began to use stereophonic magnetic recordings. Six magnetic tracks are applied to each 70mm film. After making the positive film prints, the magnetic stripes are applied to each print and then recorded. This development permits a higher quality of sound and the realism of stereophonic sound. In addition, the problem of sound placement is solved with the magnetic, multi-channel system. The channels are assigned to the following speakers: left-screen, left-center, center, right-center, right-screen, and surround. Regardless of seating position in a theater, this multi-channel system provides realistic placement of the sound.

However great the development of magnetic sound striping is, serious economic limitations also exist. The print-production costs are one such hindrance. The post-processing striping and recording increase the per-unit price about 50 percent. Another hindrance is that projection equipment and theaters must be converted and supplemented with some new equipment to accept the magnetic sound tracks; these conversions are so expensive that only the larger first-run exhibitors with large audiences can afford them. Also, this permits only a few prints with magnetic sound tracks to be marketable over a film's life expectancy.

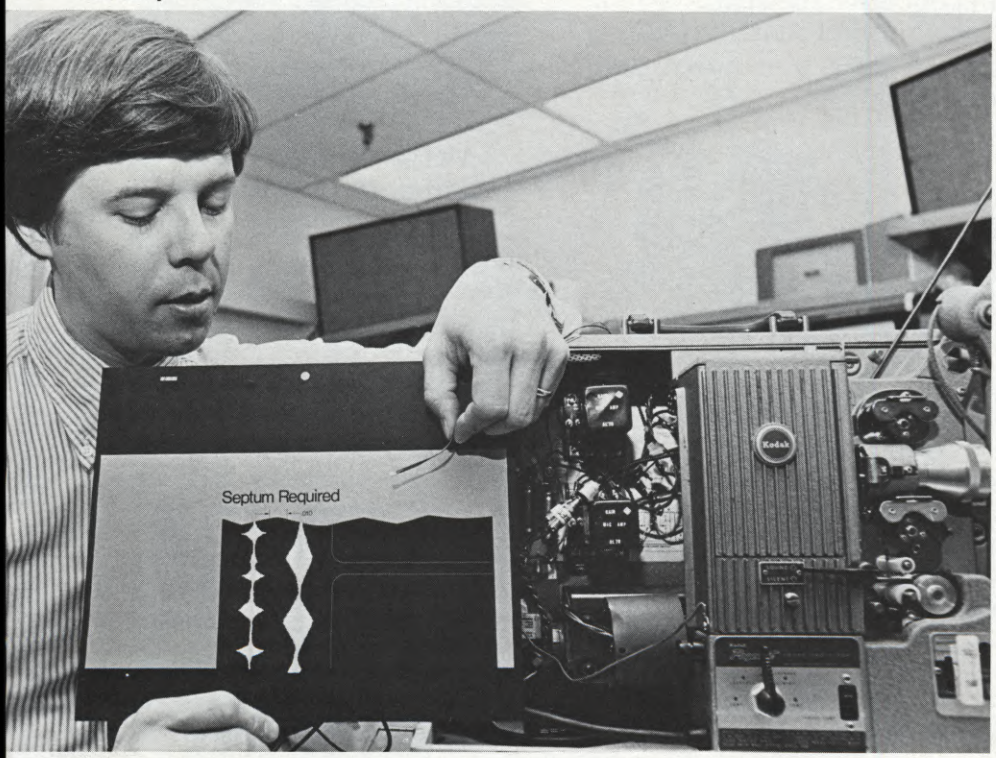
The producers must still provide other prints with photographic sound tracks to accommodate the majority of theaters. With these cost factors, it is no wonder that few films are produced in this format, further limiting the practicality for exhibitors to convert to it.

While the film industry developed, advancing technologies and increasing affluence brought the luxury of recorded and transmitted sound to more and more homes. Sound equipment in private homes progressed rapidly: phonographs, radios, television, wire recorders, open-reel tape recorders, high-fidelity and stereophonic record players, FM radios, cassette recorders, eight-track tape players, and the modern combinations.

With improved fidelity of sound equipment in their homes, people came to appreciate and desire better quality of sound, including greater frequency response, greater intelligibility, and less distortion; they also became more aware of unwanted noise, which was ever-present. In addition to other advancements in techniques and equipment to improve quality, various techniques have been tried for reducing inherent noise.

In England in 1966, Dr. Ray Dolby introduced a complementary noise-reduction system. It divides the audio spectrum into four ranges and electronically processes each range separately; later during playback, it deprocesses each range. Processing increases the volume of low-level signals. During any audio production, each recording generation adds unavoidable noises to the recording. During playback, the deprocessing decreases the volume of the low-level

Ron Uhlig examines a transducer, a sophisticated electronic device that interprets sound recordings on film. The device is a key component of a new, highly advanced motion picture sound system. Measures are being taken to remedy a situation which has found sound quality not keeping pace over the years with other developments in the film industry.



signals to their original values and, with them, decreases the unwanted noises. This is the Dolby A-type system. A less expensive system, more common in home audio equipment, is the Dolby B-type, which processes and de-processes only the highest frequency range instead of all four.

Sound quality available in homes soon outclassed that available in the film theaters. Most film sound was still produced on equipment whose design dated back to the thirties.

Now a great new combination of developments has come into use in several films, including "STAR WARS", "A STAR IS BORN" and "CLOSE ENCOUNTERS OF THE THIRD KIND". These developments incorporate the high-quality sound of the Dolby A-type noise-reduction system, stereophonic sound to solve the sound-placement problems, the economy-with-quality of optical sound tracks, and complete compatibility with unconverted equipment.

Recent Developments in Photographic Sound

Eastman Kodak Company is continuing its research-and-development work on motion picture films. The company has been involved in this field since its earliest days, and has done much over the years to improve the film for optical sound tracks as well as for visual images. Since 1968, we have been working continually on further improvements.

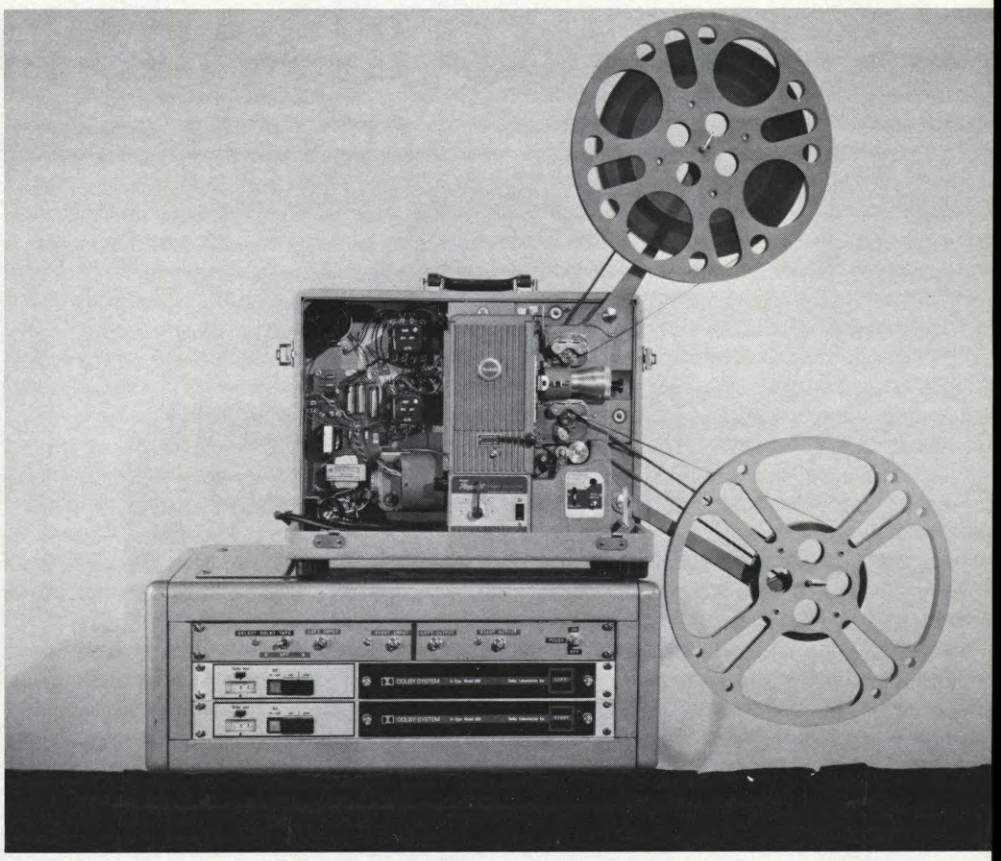
Stereophonic Photographic Sound Tracks

In late 1971 while working with Dolby noise-reduction equipment on monaural sound tracks, we realized that this equipment worked so well that we could divide the standard track area into two tracks for stereophonic sound and still obtain good quality. We started actual development work on this concept immediately. In October, 1972, we publicly disclosed the concept by presenting a paper on it at the 112th Conference of the Society of Motion Picture and Television Engineers, Inc.

Stereophonic sound offers much more realism for the audience than monaural sound does, and it provides better placement of sound in relation to the projected picture. Providing the stereophonic sound on photographic sound tracks allows a far wider distribution of the benefits than was available before. Now many more people can enjoy the great new sounds of the major stories.

Experimental Work at Eastman Kodak Company

For the experimental work, we had RCA Corporation build a stereophonic optical sound recorder for 16mm film. The optical system for this consists basically of two standard optical systems with a combining prism assembly, located between the slit plates and the common objective-lens assembly.



This is a modified Kodak Pageant sound projector with noise-reduction units.

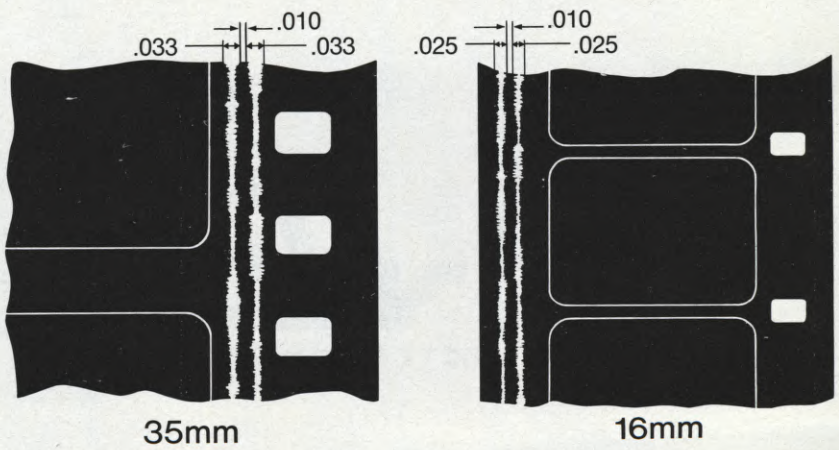
We used Dolby noise reduction for each sound track. Without this, the signal-to-noise ratio of the half-width tracks would be decreased. We tested both types of equipment from Dolby Laboratories: the A-type, designed for professional sound equipment, and the B-type, less expensive and designed for consumer equipment.

We made special projector modifications to reproduce the new stereo sound.

At the Photographic Technology Division of Eastman Kodak Company, we made test prints of each combination of these variables: both full-width and half-width recordings; A- and B-type Dolby noise-reduction units, and non-Dolby standard production methods; and

Continued on Page 786

Location and dimensions of 35mm and 16mm stereo soundtracks.



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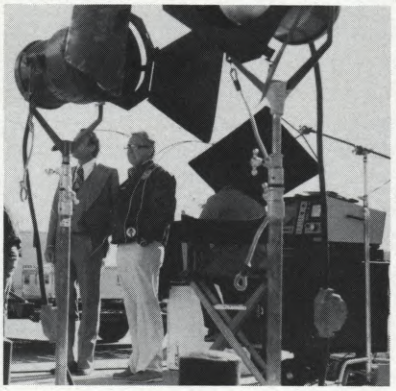

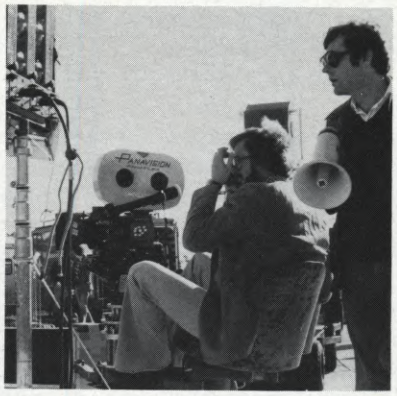

Jim Etheridge, Director of Photography, for Silvertree Productions. Ben Vaughn, Producer. Client 7-11 Stores. Agency The Stanford Agency. Doug Reynolds, Agency Producer.

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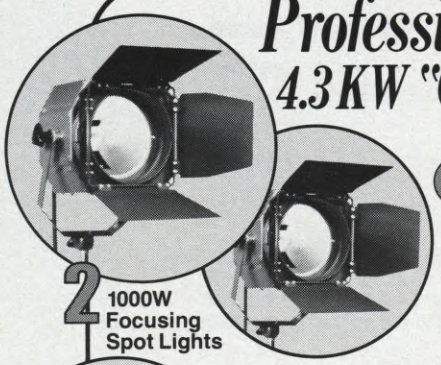
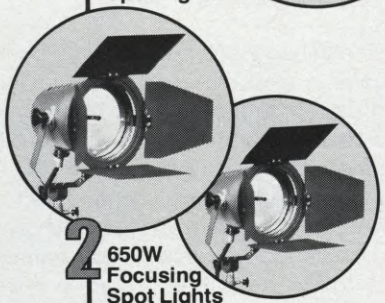
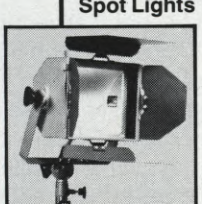


2 1000W Focusing Spot Lights



2 650W Focusing Spot Lights



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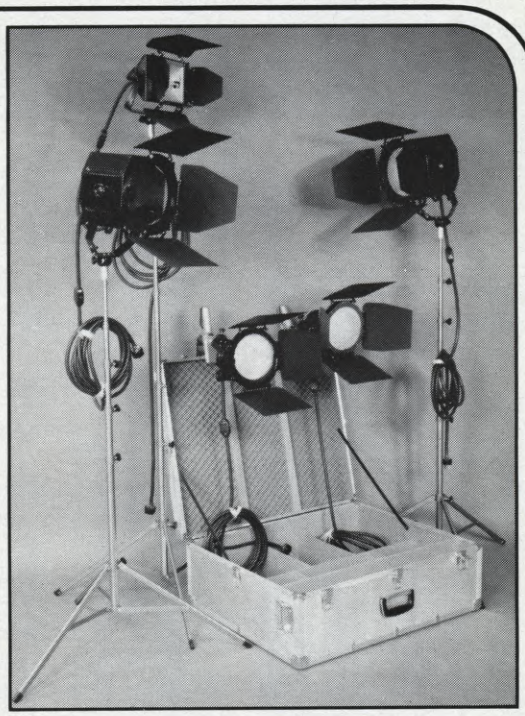

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SOUND OF THE STORY
Continued from Page 783

both new and worn prints.

The results of these tests, summarized below, verify the decrease in signal-to-noise ratio in changing to half-width tracks. The results show, as expected, that both types of Dolby equipment increase the ratio—they decrease noise, including hiss. The A-type proved more effective, naturally, with hiss and with all other types of noise.

We performed many other evaluations, including dynamic tests, listening tests, and evaluations of compatibility with existing equipment.

Our findings lead us to recommend half-width, variable-area, photographic soundtracks, placed side by side in the area normally occupied by a conventional monaural track. A small separation is needed between the dual tracks to prevent crosstalk. For 35mm film, the total width of the two tracks and their separation is 0.076 inches, or 1.93mm, the same as for a standard monaural track.

Two-track stereo sound is a great improvement over monaural. Its compatibility with unconverted monaural equipment is very important for widespread use. However, it does have a sound-placement problem. Viewers are distracted whenever a voice seems to originate several feet from the visual image of the person on the screen. The farther the viewer is seated away from the center line of the auditorium, the greater the apparent sound shift.

Opinions from experts in theater sound showed the importance of three channels—left-, center-, and right-screen—to solve this problem. Therefore, we carefully considered both the two-track and three-track optical sound systems.

Using three discrete tracks seems to be the ideal choice. It best solves the placement problem. However, to narrow each track enough to fit all three into the width of a monaural track would invite serious adjustment problems in projectors, higher equipment costs, and decreased signal-to-noise ratio. To allow a greater total width for the three tracks would destroy compatibility with existing monaural projectors, and carry the same important economic disadvantages which hinder magnetic recordings on film. We would find a shortage of converted exhibitors and a shortage of good releases; each deficiency would inhibit overcoming the other. Furthermore, standard monaural releases would still be necessary.

Later, we began experimenting with a system of two tracks plus a derived center channel (a two-track, three-channel system). Each track drives a side speaker; the third channel, derived from the signals on the combination of the two tracks, drives the center speaker.

This system is a good compromise between the two-track and the three-track systems. Its sound quality is excellent, and it eliminates most of the sound-placement problem. Its costs are also a compromise between the other two sys-

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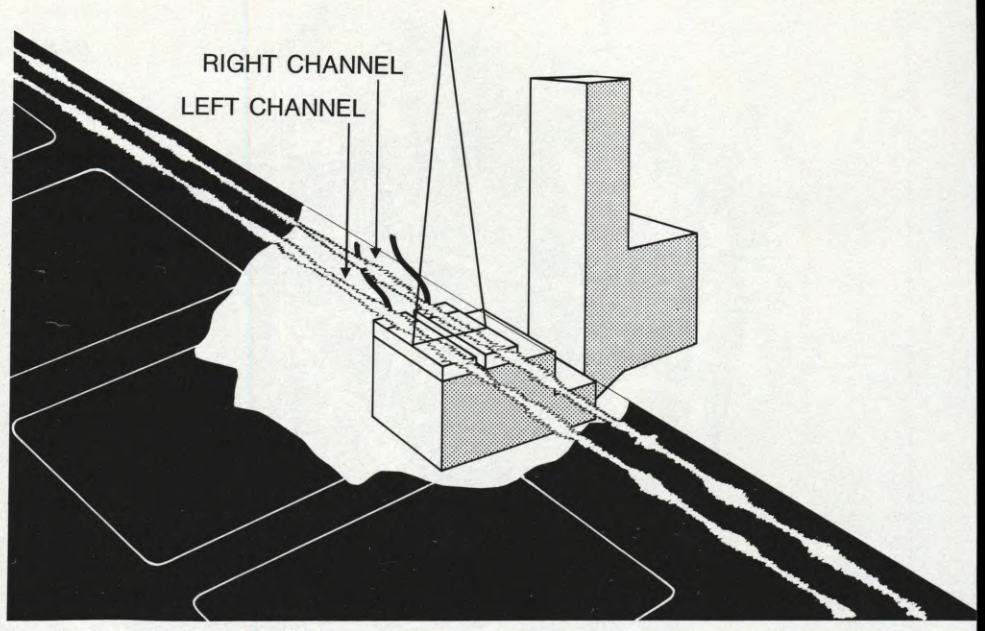
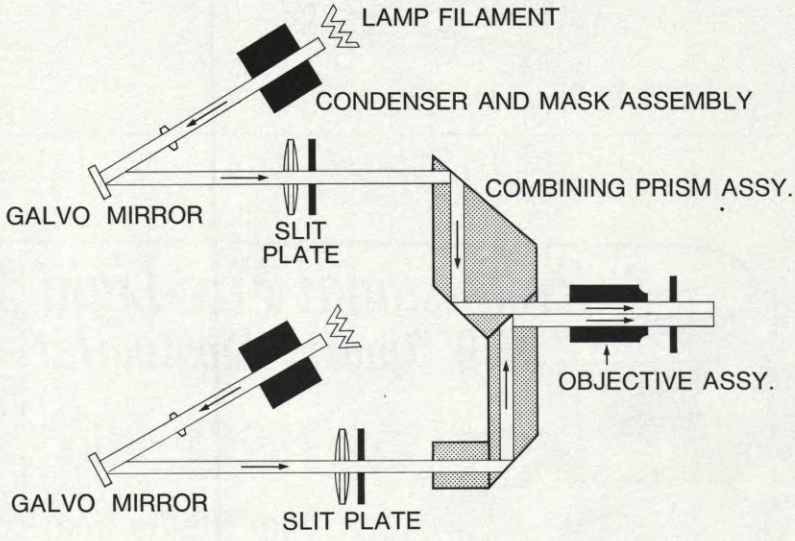
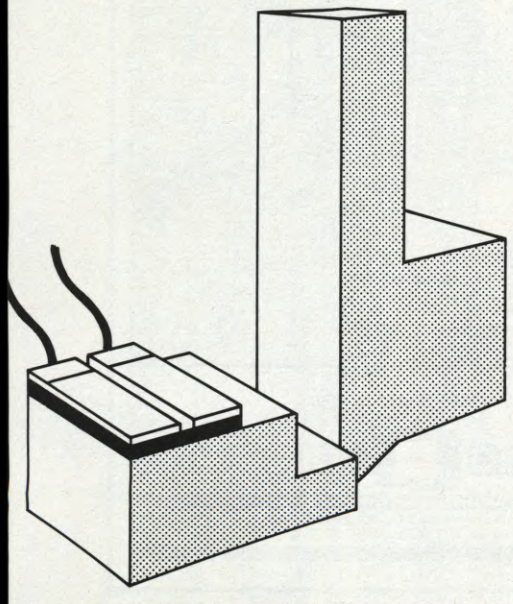


This diagram illustrates a system for reproducing stereophonic photographic soundtracks.



Schematic plan view of the optical system of a stereophonic recorder.



This diagram shows a two-element photocell which could be used for reproducing stereophonic photographic soundtracks.

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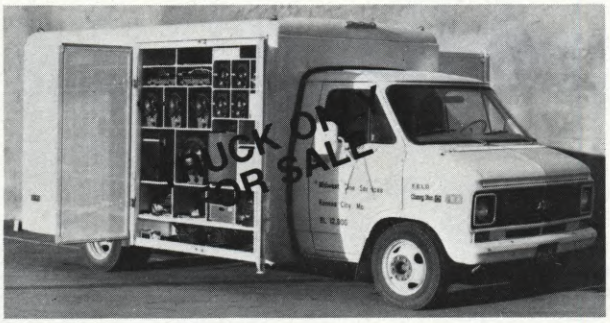

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INDUSTRY ACTIVITIES
Continued from Page 773

vices, Victor Duncan hosted a two-day open house and equipment symposium in mid-May. The Friday Open House, complete with cocktails and hors d'oeuvres, featured 17 major manufacturers and their representatives.

More than 200 visitors toured the new facilities and discussed the latest state-of-the-art equipment with these manufacturers and the Victor Duncan staff. Manufacturers participating in the Open House included Angenieux, Arriflex, Berkey Colortran, Canon, Cine 60, Cinema Products, Kodak, Lowel-light, Magnasync/Moviola, Matthews, O'Connor, AKG, Rosco, Soremec/Eclair, Strand Century, Tiffen and Vega.

Running concurrently through both the Open House and the Symposium, Angenieux conducted their now-famous "Lens Clinic". In this presentation, filmmakers are invited to bring their own zoom lens for test and evaluation. The user essentially tests his own lens with special projection equipment, and minor adjustments (if necessary) are made on the spot. Jeff Giordano and Lenny Shorr of Angenieux, N.Y., provided their technical expertise.

Early Saturday morning, under overcast skies and drizzling rain, 187 filmmakers registered for the Motion Picture Equipment Symposium. Overnight the Duncan staff transformed the building into two demonstration and lecture halls, complete with sound systems and projection equipment.

The Symposium was divided into two sessions operating concurrently to allow registrants the opportunity to choose those topics most closely related to their personal interests. In all, a total of fourteen separate presentations were made, covering topics from camera maintenance, to filters, to post-flashing film.

Cinema Products opened the Session A Seminar, with Ed Clare outlining the objectives of the CP maintenance training program. Chuck Jackson, Assembly Supervisor for CP, covered the mechanical systems of the CP-16 and CP-16R cameras, giving factory tips for the working cameraman on field maintenance repair, and prevention of camera malfunctions. Following Chuck was Wayne Weichel, who covered the electronic systems of the camera and provided technical insight for the cameraman on location in maintaining those systems while in the field.

Concurrent with the CP Seminar, Session B began with Holmes Ives of Magnasync/Moviola demonstrating the different applications of maximizing use of the flat-bed editors and interface of the editor with the new Series 3000 insert

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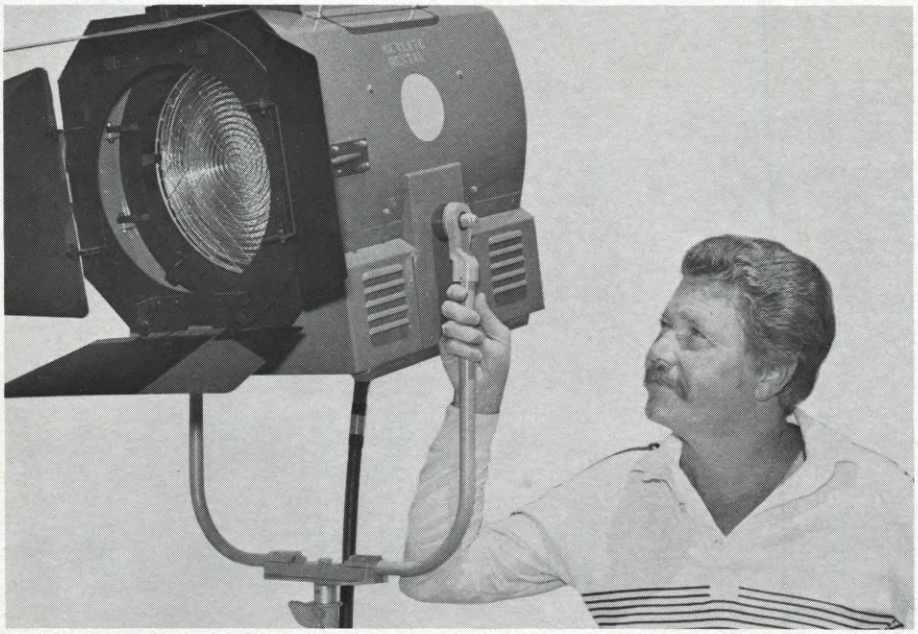


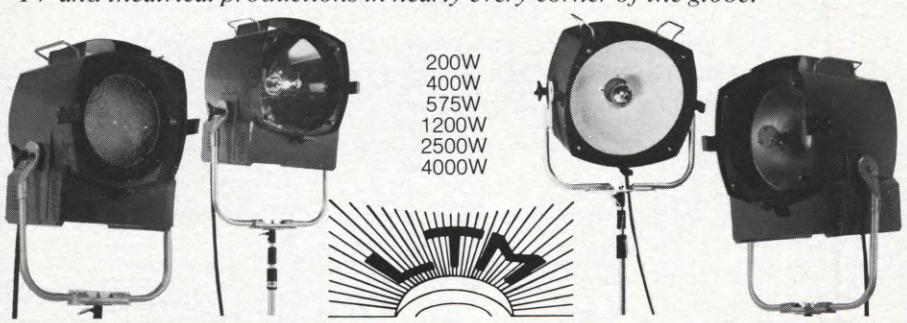
Veteran Lighting Gaffer

Thomas E. Hayes

talks about HMI lights:

"On the average, I estimate that I can cut lighting time by about 40% on most productions by using LTM's HMI lights. For example, we just brought in a full-length feature film at MGM five days ahead of schedule, and our use of LTM lights accounts for a large part of that saving for the producer. Any experienced gaffer who has worked with them will give you several good reasons why he'd rather use LTM lights than any others. They're so much lighter in weight and so much easier to handle, they can be struck, moved and reset in about half the time required for arcs and incandescents. They don't require frequent bulb replacements, which saves the production still more time . . . and money. Then there is the element of cast and crew comfort; everybody on the set seems to work faster and better, because they don't have to endure the fierce heat generated by other types of lights. You can't reasonably argue against demonstrated fact: you have to budget more for LTM HMI lights going in, but they invariably show a saving of many times their original cost when you get to the bottom line."

Tom Hayes has been a member of IATSE since 1958 and has been lighting gaffer on major feature film productions, TV feature length films, TV series and videotape productions at all of Southern California's leading studios and on locations around the world. He literally 'grew up' in the field of motion picture lighting under the tutorship of his father and uncle, both of whom were widely respected Hollywood lighting gaffers. Tom's outstanding reputation was firmly established in the industry after eleven years with Twentieth Century Fox, following which he has been in constant demand for TV and theatrical productions in nearly every corner of the globe.



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recorders. Following the Moviola presentation, producer Paul Cicarelli introduced the Canon presentation, "A Practical Guide to Lenses".

The multi-media Canon presentation covered the basics of camera lenses, from manufacturing and the principles of optics to lens quality and technical applications of various lens properties. Cary Clayton, of O'Connor Engineering, presented the O'Connor line of fluid heads and camera support gear, demonstrating the range of heads available to the professional filmmaker for use with any motion picture and video camera.

Marvin Seligman of Lowel-Light introduced the Lowel Omni-Light System to the Session B crowd. The versatile Omni System operates on three voltages: 30v, 120v and 240v, and provides maximum wattage output from a lightweight, portable unit.

Back in Session A, Ed Clare completed the Cinema Products presentation by introducing the new MNC-71CP color camera system and then demonstrated the many advantages of the camera in both ENG and field production situations. This camera, distributed in the Midwest by Victor Duncan, makes extensive use of the new LSI micro circuits, which reduce the number of individual components in the camera, resulting in significantly more stable performance.

Completing the morning's presentations in Session A, Regis Laderriere of Soremec/Eclair hosted a lively question and answer session while he demonstrated the Eclair ACL single system camera with accessories.

Don Civitillo of Cine 60 presented the Cine 60 line of fast-charge batteries for cinematographers. Civitillo outlined the mechanics of batteries and gave many tips to professional cameramen in the care and maintenance of their power supply. At the end of the presentation, he announced plans for a new automatic battery discharger soon to be available. The unit will offer a variable discharge rate and many other features that will add greatly to the life of Nicad rechargeable batteries.

The cloudy skies cooperated with the symposium and cleared for the lunch break, giving everyone an opportunity to move around outside and discuss the morning sessions. Immediately following this break for lunch, the symposium resumed.

Richard Schreibman of Arriflex resumed Session A by introducing the Arri 16SR and the many applications this versatile camera affords the professional filmmaker. After explaining the basics of the 16SR and its accessories, including the Video Finder System and the new underwater housing unit, Schreibman in-

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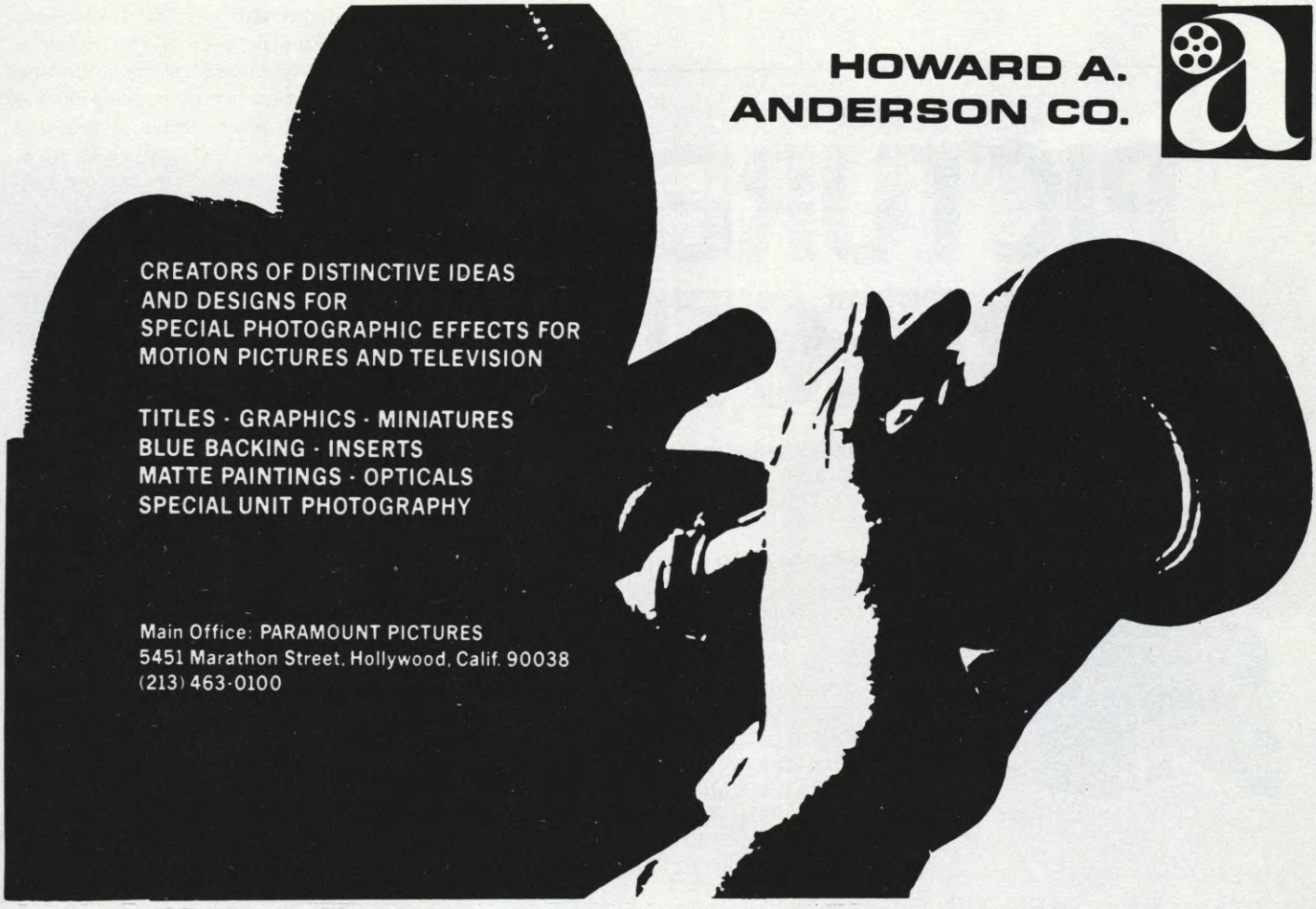

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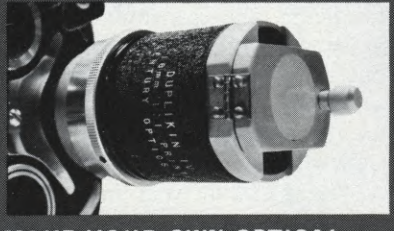

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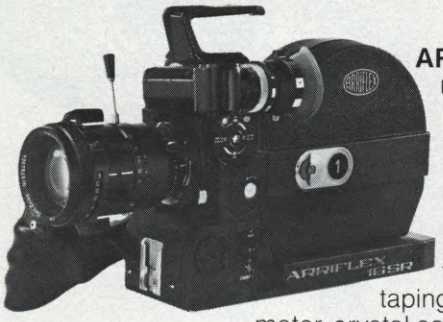

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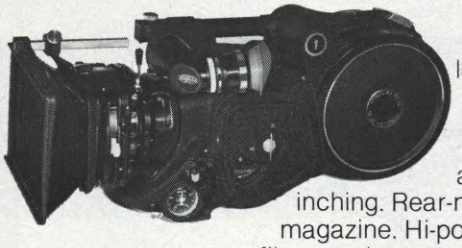

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The P.M. Session in section B began with Ed Gallagher of Strand Century, who introduced the audience to "HMI Technology". His presentation covered the many applications of the new HMI lighting. Gallagher commented on the cost efficiencies of HMI's in spite of the high lamp costs. Lamp life is up to 1,000 hours, which offsets the initial cost. According to Gallagher, recent improvements in lamps have increased lamp life and at the same time reduce color temperature loss to as little as ½-degree Kelvin per running hour.

Following the HMI presentation, Victor Duncan introduced Roger Zobel and Mike Niehenke of Rosco to the overflow audience in Session B. Zobel began the presentation with a demonstration of the Cinegel line of Rosco light control media. Throughout his talk, Zobel stressed the many diverse uses of Rosco material in the production of film products. In addition to the visual demonstration of conventional light control materials, the new Rosco rear screen material was on display in the front offices with a continuous film screening of "The Arri Image".

Tiffen Filters, with Ira Tiffen at the helm, succeeded Arri in Session A. The Tiffen show covered the many different uses and effects possible with the complete range of filters manufactured by Tiffen. What does it look like with a fog? A double fog? A low contrast? Diffusion? A Vari-Burst? It was great to see a comparative photographic example of precisely what effect each filter produced, and that is exactly what the Tiffen slide show demonstrated.

Jack Teahan of Eastman Kodak rounded out the session A presentations with a program dealing with "flashing" of high-speed Ektachrome for inter-cutting with Ektachrome 7252. Teahan demonstrated that now, by means of post-flashing, many of the high speed films originally designed for television news applications may be successfully intercut with commercial 7252 to meet non-broadcast film requirements. Teahan suggested that post-flashing is preferred over pre-flashing in that it does not change speed, just the contrast.

The concluding presentation in Session B was given by Les Zellan for Berkey Colortran. Demonstrating a broad range of Colortran lighting, Zellan provided the

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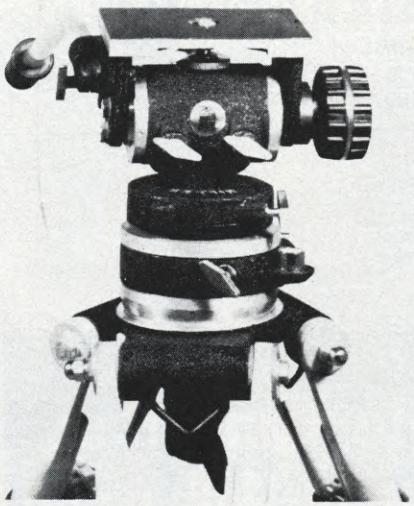

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audience with many insights into ways to accomplish difficult location lighting situations with the Colortran Pro-Kit IV. Zellan also demonstrated the very latest in studio and location fill lights, the Colortran 1K/4k Soft-Lite, with the new Berkey Spring Pantograph Studio Mount.

Following the Berkey and Kodak presentations, sessions A and B were combined for a Hands-On demonstration of the Academy Award winning Steadicam. Co-hosted by Jim Benoit of the Chicago Victor Duncan staff and Ed Clare of Cinema Products, the presentation gave the members of the audience a first-hand look at the Steadicam at work, and an opportunity to try it personally.

As the Steadicam moved through the guests, the two-day Symposium drew to a close. The purpose of the Symposium had been to provide a forum for the interchange of ideas and information between the manufacturers and filmmakers. And all in attendance agreed that it had been a tremendous success, while indicating the wish that it might become an annual event for Detroit and Midwest filmmakers. ■

CINEMA WORKSHOP
Continued from Page 746

can be used to advantage. Taping two cardioids (or omnies) together (FIGURE 9) and connecting them out of phase with each other will cancel much of the ambient sounds; yet sound presented in close proximity to *only one* of the microphones will be received.

When it is impractical to use one microphone to pick up a group of people, multiple microphones must obviously be used. However, the trick here is to maintain a distance ratio of 3:1 between adjacent microphones. If the microphones are placed one foot from the speaker's mouths, the next microphone over should be at least three feet from the speaker's mouth (FIGURE 10). This will achieve at least a 10 db separation between microphones, which should preclude any impairment of the sound due to phase cancellations. ■

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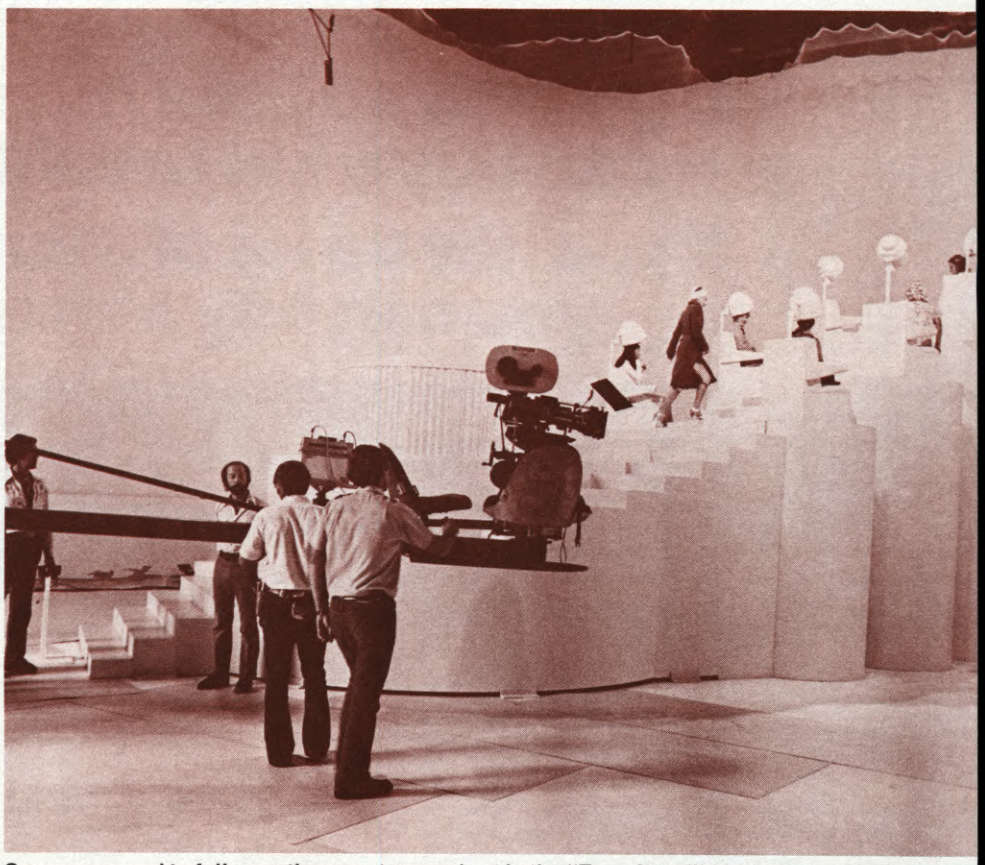
PHOTOGRAPHING "GREASE"

Continued from Page 765

for special rigs that have to be built. If Colin and George, my two "generals" are successful in getting their work done efficiently ahead of time, then the production will move so smoothly that people will think it's easy—and that's the way we want it to look. All of it, though, is preplanned; there is no other way.

Pre-planning includes a multitude of items, such as: where the generator is going to go, where the cables are going to be run, how to get the power where you want it if you're working on the fifth floor of some building, how to get the equipment up there, what entrance to use. All of that has to be worked out in advance.

From the cinematographer's standpoint, one of the most important preplanning decisions is the type of lighting that is to be used eventually in the particular rooms where shooting is to take place. In many cases, the lighting I use requires spreaders, which George Hill will make to hold the lights that Colin Campbell will put on them. I do a lot of very special kinds of lighting, using special equipment that Colin has found or developed and special methods of masking the lights that George has worked out. We have a lot of this special equipment that we have developed over the period of time that we've been together. We have to decide what we will need where, and what we'll have to build. What will work in one room won't necessarily work in another room. If a ceiling is too low for us to go overhead with our lights, we'll have to figure out some other place to put them. All of these decisions are made before we start shooting. That doesn't mean that we may not change our minds, because conditions have a way of changing on location, but we go in with a plan that we try to stick to very closely.



Crane was used to follow action up a terraced set in the "Teen Angel" fantasy number. The sequence, with all set elements in off-white, was staged against a limbo background to achieve a "spaceless" look. Bounce light was used exclusively to soften the look, although the lenses remained sharp and filterless. A bit of dry ice fog added to the effect.

A much smaller crane was used in the gymnasium to film the dance contest. Extensive camera movement was used in "GREASE" to complement the movement of the dancers, no easy task, since the dancers moved at such a high rate of speed. Overcoming the inertia of the camera to get it to go and stop precisely with the action was a continuing problem.

To enlarge on the special equipment I mentioned, I must say, first of all, that George Hill is a mechanical genius. He seems to have that strange sense of how to handle mechanical things more quickly and efficiently than other people, whether it's putting a camera mount on a car or something much more complicated. He's very inventive and he'll make me just about anything I need. He's made me a device that enables me to put a camera flat on the floor and still have pan-tilt capabilities. I've got a wheelchair that's fantastic. It's not an ordinary wheelchair, but a chair he made that sort of looks like one. It's got brakes and you can stand up and shoot from it or step off and walk away. If you want to go down a narrow hallway hand-held, the operator doesn't bounce up and down all the way.

He's made me many, many devices like this and they all go toward making movies better.

Similarly, Colin Campbell has developed special lighting devices. When we first started out we used to hang very heavy, clumsy things in rooms, because that's the way the equipment was, but he now has equipment that is so lightweight that it hardly takes anything to hold it up—and it still puts out the same amount of light. All of these things add up to getting the job done faster and better—and when you're going for a certain look, it's basically the little things that make the difference.

For the filming of "GREASE" we worked mainly on location, but also did some shooting in the studio. I can't say which method I prefer, because I love both. On the one hand, I love shooting in the studio, where illusions can be created and where you can have total control. But on the other hand, I equally enjoy the naturalness of shooting on real locations. It's very difficult to beat the reality of an actual location, but what hurts me is when we select a real location and an art director comes in and makes it look like a studio set. That bothers me a lot.

But having shot both on real locations and studio sets, I have no preference, one over the other, workingwise. Each presents different problems and different advantages. If you are creating an illusion, the studio is a nice place in which to work because of its facilities and the inventive things you can do with light and walls and windows. You have greater versatility and you're not strictly at the mercy of the sun, the time of day and the length of time you have to get the shot. I've been successful in making studio

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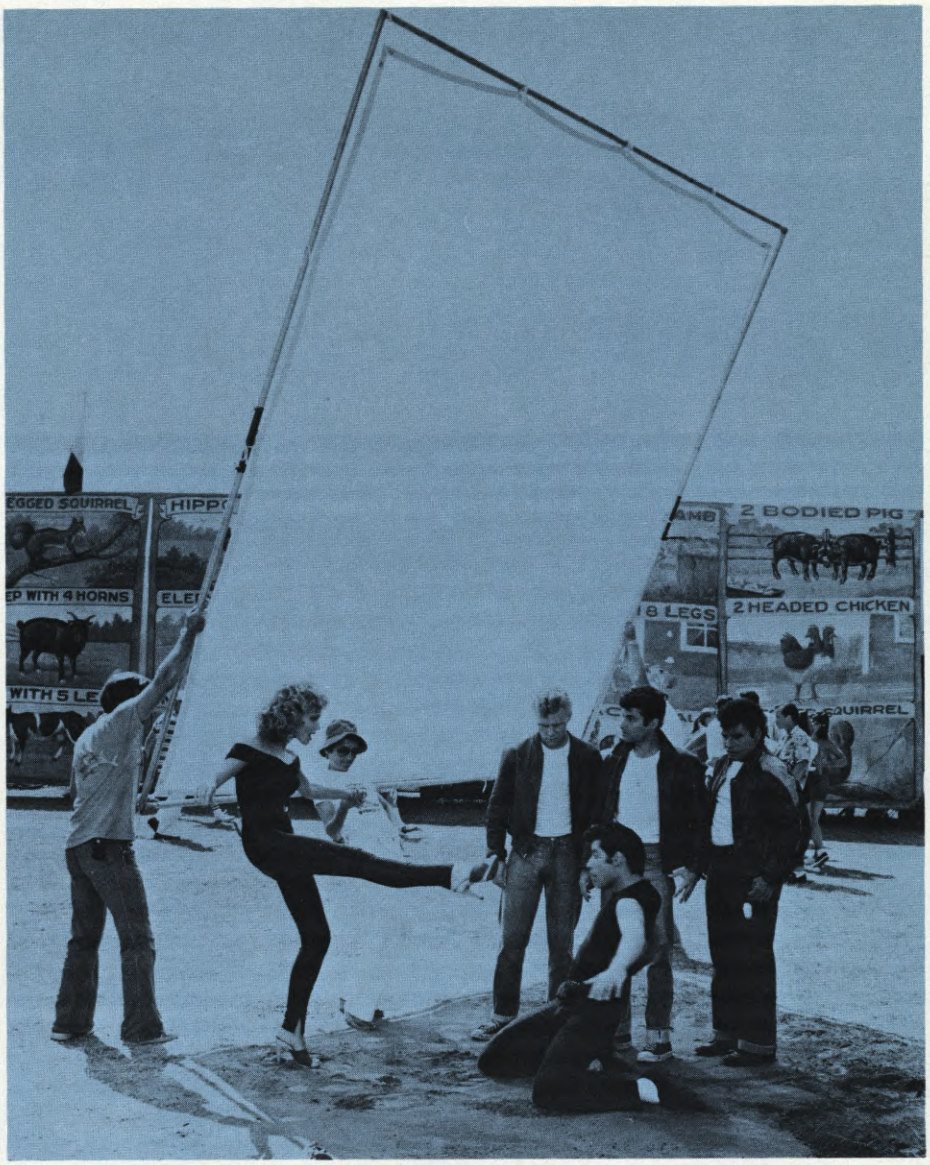


A large scrim was used to diffuse the harsh sunlight for a shot of Olivia Newton-John in the carnival sequence. As is often the case in exterior shooting, the problem of matching between sunlight and overcast was a constant one. However, because there were so many people and costly elements involved, camera and lighting adjustments had to be made very rapidly.

One of the most exciting action sequences in "GREASE" is the drag race between Travolta and his rival. It was filmed in a concrete drainage ditch with sloping sides and a super-low camera car, with two cameras mounted, made it possible to stay with the cars as they zoomed up onto the sloping sides. Although excellent stunt drivers were available, they actually had to be held in check, because the aim of the sequence was not to present the most spectacular car action ever filmed.

THE FILMING OF "STOCKCAR!"

A backbreaking six-month shooting schedule, with ten spectacular events to be covered, characterized the filming of this first-ever ninety-minute documentary feature on the world of stockcar racing

By JOHN HOLMSTROM

"STOCKCAR!" began in the teakwood-lined splendor of the Sheraton Bangkok's Royal Suite. My colleague, Glenn Johnson, and I were in Thailand and Bangladesh producing a documentary film when I received a call from Ford Motor Company. Ford's manager of film communications, Johna Pepper, asked me to produce a film on the stock car racing team of Junie Donleavey and Dick Brooks when I returned to the States. The resultant half-hour documentary, "NOT JUST GOOD ENOUGH", so impressed members of the racing fraternity that it led to my first feature-length documentary film, "STOCKCAR!" An alliance with Virginia race promoter Ken Campbell and various investors produced the two-hundred and some thousand dollars necessary to finance the ninety-minute film.

The six-months production schedule in which ten races were shot throughout the U.S. was backbreaking. If any filmmakers want to compare stories about the rigors of documentary filmmaking I'll just point to the four days I had off in six months. And one of those days was for the dentist. Being a producer-director-cameraman-editor of a low budget feature leaves little time for anything but work!

Extensive research with race fans at different tracks indicated that they were all interested in the behind-the-scenes activities of racing. They insisted that television just showed the cars going around in a circle with all the attention devoted to the top two or three competitors. They wanted to see how the race cars were built, what happens during a pit stop, the aftermath of a crash, how a race is controlled, and what it's like to be inside a car traveling at two hundred miles an hour.

Glenn Johnson was my associate producer. In reality it meant he did just about everything: edited half of the film, affixed cameras inside race cars, shot film, kept the petty cash, set up lights, constantly contributed to the structure of the film, handled equipment rentals, organized the editing room, worked with the labs, and never once lost his initial enthusiasm for the project.

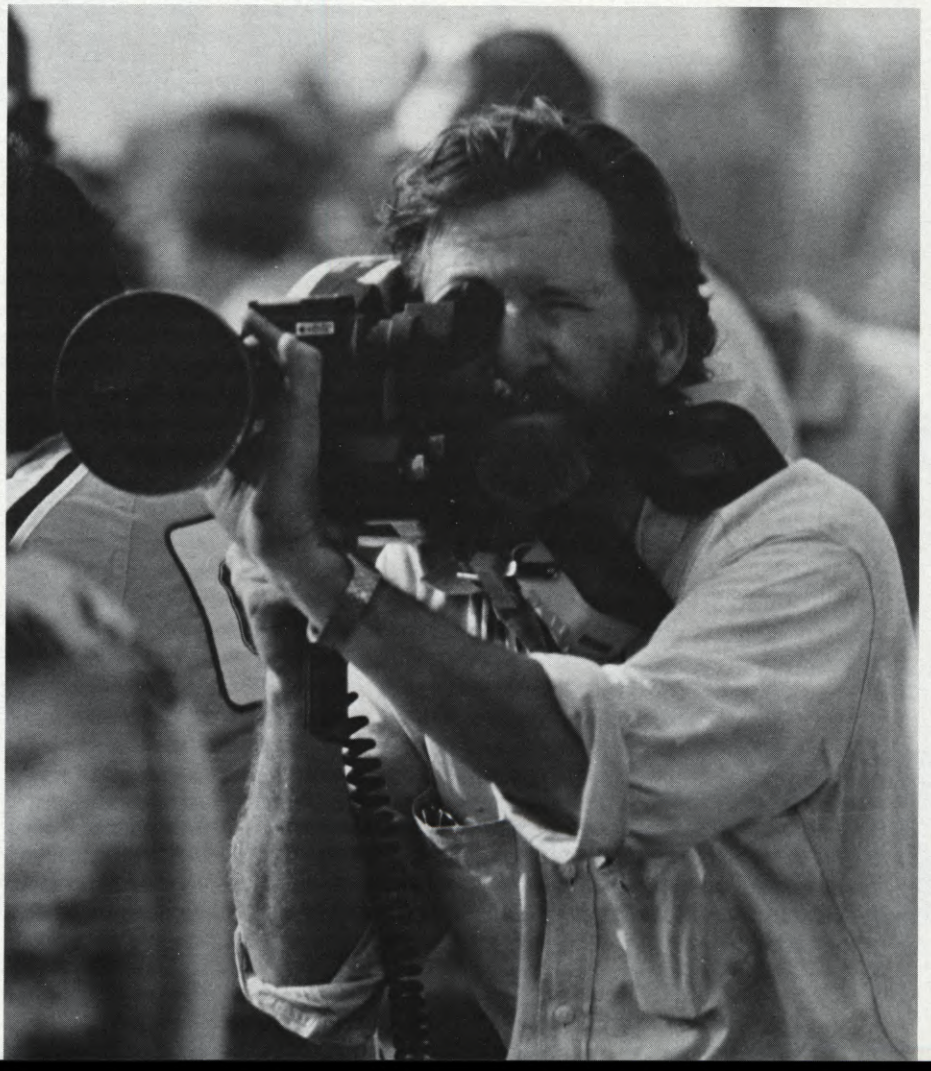
A native of Hollywood, Glenn trekked to Atlanta where I set up a production office to be close to southern-based drivers and most of the races. Glenn's broad experience in producing and directing industrials, commercials, and educational films was invaluable. Also coming to Atlanta as the writer on the production was my brother David, a former San Francisco bureau chief for the Christian Science Monitor. Dave had also worked with me as the writer-associate producer on "IN THE SHADOW OF THE MOON", an hour documentary I produced for Florida public television in 1975.

Glenn, David, and myself had numerous lengthy and spirited meetings attempting to hammer out a story line for the film. Due to restrictions imposed on the project by previous contracts made with television, our agreement with the National Association for Stock Car Racing (NASCAR) excluded the depiction of any race as such, with a beginning, middle, and end. Therefore, we decided to have the drivers "carry" different events leading up to an actual race. Intercut with these episodes would be action racing footage on each featured driver. The drivers were Bobby Allison, Buddy Baker, David Pearson, Richard Petty, Benny Parsons, and Cale Yarborough, all of whom have won a million dollars or more in prize money.

A woman's view of racing would feature Janet Guthrie. Californian Dick Brooks, featured in the Ford film I produced, would state the underdogs' look at racing and serve as the narrative thread that held the episodes together. Johna Pepper of Ford granted me the right to use some of the Ford footage, which was an immense help to our budget.

So, with me acting as producer-director-cameraman-editor, and Glenn as associate producer-editor, and Dave as writer-soundman, the three of us began to make the first-ever feature-length documentary on the world of stock car racing, "STOCKCAR!"

Using the Eclair ACL camera, with 9.5mm-to-95mm lens mounted, John Holmstrom films scenes in the pit during the Daytona 500 race in Florida. Holmstrom's opportunity to produce the 90-minute "STOCKCAR!" resulted from the praise accorded "NOT JUST GOOD ENOUGH", his previously made half-hour film on the stockcar racing team of Junie Donleavey and Dick Brooks.

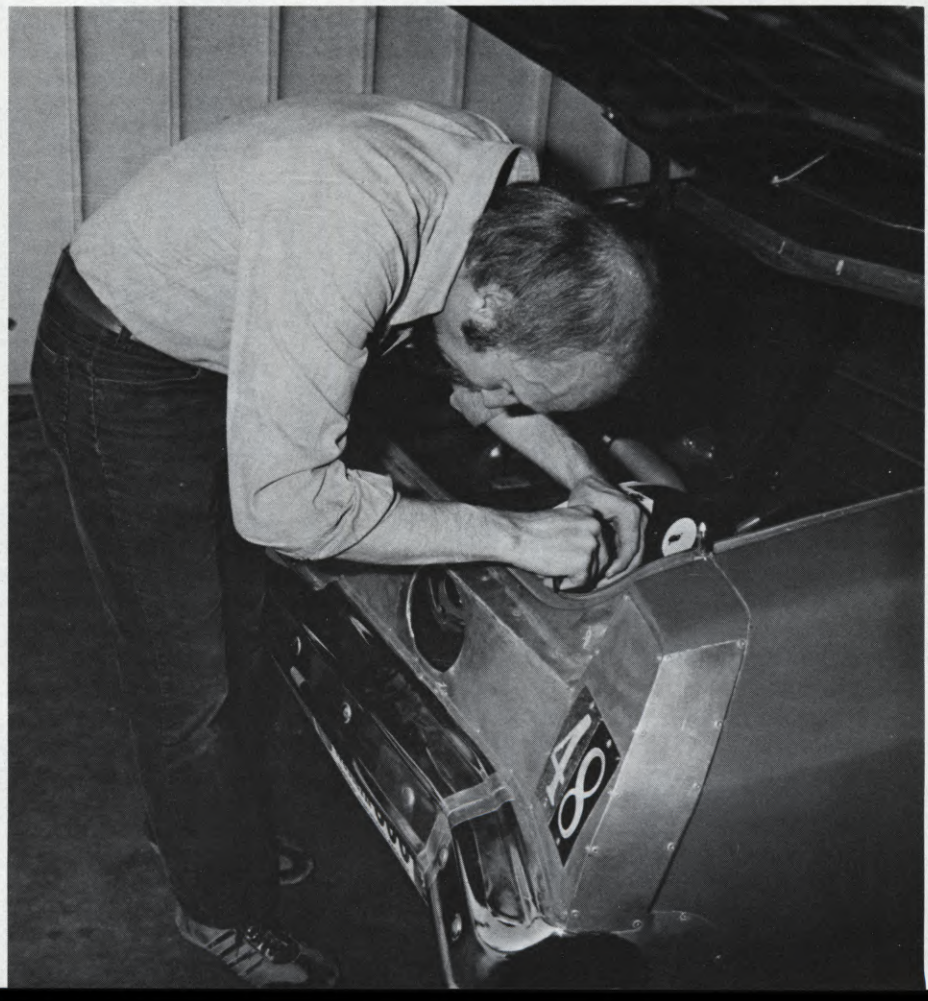


Our first priority was filming from race cars to get a view seldom seen by the fans. Atlanta's Kirk Wooster, a producer in his own right, built a number of camera brackets of varying configurations. Two were made out of small vises that could be quickly clamped to the roll bar tubing inside race cars. Past experience in filming drag, sports car, and Formula One races has taught me that racing teams come to the track to race, not to make films. Every minute the crew spends readying the car gets them closer to the checkered flag. Several times we were told we couldn't put a camera in a particular car, only to have a crew member wander by later and remark that we could put the camera in if we wanted to . . . right then! So our brackets had to be such that they could be quickly installed.

Serving as a cameraman on several of the races was my good friend Zack Krieger, head of Chronicle Films in Arlington, Virginia. We had previously worked together on a number of Ford films and a documentary in Honduras. Ben Adams, from Lansing, Michigan, also shot for us. When not working Ben and I reminisced about a job we had done in Iran. Ben, Kirk, and Zack all worked long, hard hours and turned in exceptional footage under many handicaps. Some of the best footage in "STOCKCAR!" was shot by Californian Rick Robertson. Armed with a 500mm lens, Rick shot stunning rack-focus footage of race cars twisting and turning on Riverside, California's demanding race course, that was a highlight of the film. His footage was intercut with on-board scenes from inside a race car during a race.

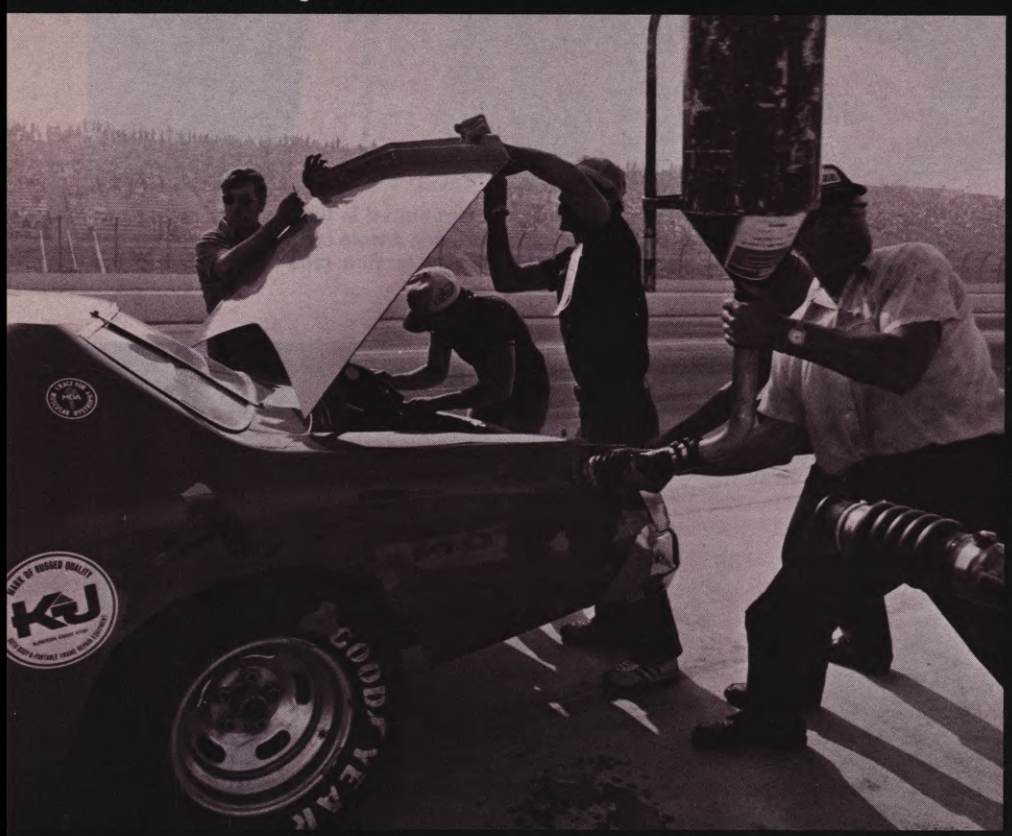
Special permission from NASCAR allowed us to mount cameras inside the race cars during the actual race, and we hired three different race cars during the production to film for us. Three different camera positions were used on James Hylton's red number 48 Chevrolet. A steel bracket was welded into the trunk of his car to hold our ACL camera. The ACL proved to be an ideal camera for this position as it was light, sturdy, and had a low profile. The lower we positioned our 10mm lens, the more dramatic view it provided from the trunk. A hole was cut in the rear panel of the trunk for the lens and the control switches were affixed next to Hylton's gearshift—one switch for the rear view camera and one for the over-the-shoulder or side-view camera, depending on which setup we used. These cameras produced some unusual footage of race cars spinning off the track, bouncing out of control, and stunning full frame shots of pursuing race cars.

Although we filmed five races with a variety of on-board cameras, we never



(ABOVE) Glenn Johnson readies an Eclair ACL camera bolted in the rear of a racing car. (BELOW) Johnson adjusts camera mounted in trunk of car. A hole cut in the rear of the car (under his arm) enables the 10mm lens of the camera to film race action during the competition.

(LEFT to RIGHT) Glenn Johnson, race driver Cale Yarborough, David Holmstrom and John Holmstrom discuss the production schedule, which included filming Yarborough's off-track activity as a county commissioner in his hometown of Timmonsville, S.C. This picture was taken shortly before Yarborough won the championship for the second time in 1977. (BELOW) "STOCKCAR!" film crew replacing magazine on ACL during pit stop, while man at left refuels gas tank.

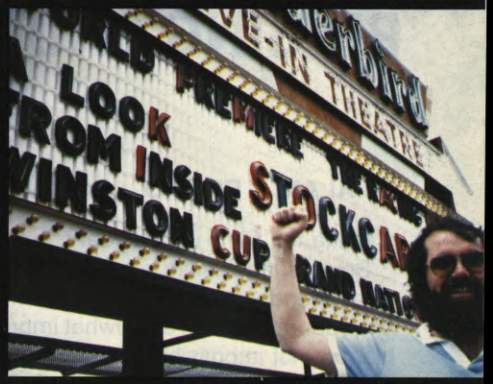


lost a camera, lens, or battery. Not bad, considering the pounding they received during the three-to-four-hour races at speeds up to 200 miles per hour.

NASCAR'S competition director, Bill Gazaway, who was an invaluable help to us throughout the production, allowed us to work in the pits during the races. This enabled us to change the on-board camera magazines during race competition. During the races I normally functioned as a cameraman-director with a handheld ACL and 9.5mm-to-95mm zoom lens. However, one time I worked with the magazine changing crew.

I'll never forget jumping the pit wall at the Ontario Motor Speedway in California. Alongside me was Richard Villarino, our production manager at Ontario. As Hylton's race car screeched into the pits, the auto crew leaped over the wall holding gas cans, tires, and wrenches, followed by the film crew! As I ran to the side camera I sensed the trunk being opened and Glenn Johnson and my good friend and ace attorney, Chuck Cale (a low budget brings help from many places!), beginning to change magazines on the rear camera. Stepping between the two auto crew members frantically changing tires, Richard removed the spent magazine from the camera and handed it to me. As he was looking for possible dirt in the aperture I was conscious of the incredible engine noise and the whoosh of other cars passing very close to us on the pit lane. Suddenly Hylton's car, which had been raised up on a jack, slammed down, the right side tires replaced. Quickly I gave the fresh magazine to Richard and he popped it on the camera. As Hylton geared down into first I took the alcohol-soaked swab I had been holding between my teeth into my hand and wiped it against the lens filter, removing the accumulated dirt. The race car started forward with an explosive roar and I instinctively tried to keep moving with the car all the while wiping the cotton against the filter. I was no match for the race car and it quickly left me behind with my arm flaying away at nothing. Glenn, Chuck, Richard, and I all smiled when we heard the track announcer say, "James Hylton is back on the track after taking on two new tires, gas . . . and changing film

(LEFT) Eclair NPR camera mounted on race car to provide side view during race. (CENTER) Glenn Johnson adjusts focus of 10mm lens on NPR mounted inside race car. (RIGHT) Preparing equipment for the shooting of the Ontario, California race. (Left to right) Cameraman Rick Robertson, John Holmstrom and Kirk Wooster ready the Arri-S for filming. In addition to spectacular racing sequences, "STOCKCAR!" explores the behind-the-scenes aspects of this special world.



(LEFT) David and John Holmstrom prepare to shoot opening screen credits. Pit board #90 is the number of race driver Dick Brooks' car. The board is used to signal the driver during the race. Brooks was the narrator for "STOCKCAR!". (CENTER) John Holmstrom hand-holds ACL to film Ontario race. (RIGHT) Cameraman Ben Adams celebrates premiere of "STOCKCAR!" in Charlotte, N.C.

Howard Penchesky, designer of "STOCKCAR!" titles, affixes lettering to lapboard prior to filming, while David Holmstrom watches. Penchesky, a member of the #90 Dick Brooks-Junie Donleavey racing team, is also a sign painter in Richmond, Va. (CENTER) NPR with 10mm lens mounted inside #49, James Hylton's race car. (RIGHT) ACL with 10mm lens mounted on roll bar behind driver's seat in a race car.

in 16 seconds!"

One awesome moment occurred during a race at Rockingham, S.C. We had an NPR camera mounted behind driver Ricky Pearson, looking out the front of his car. It was positioned in such a way that we could not change the magazine during the pit stops. My brother, Dave, was stationed on top of the grandstand with a radio-controlled camera switch Glenn had ingeniously devised out of a model airplane remote control kit. With two laps to go in a very competitive race, Ricky suddenly lost control of his car and slammed into the wall at 100 mph and slid backwards for 75 yards to a stop. Kirk Wooster shot the accident from another grandstand and I filmed the aftermath from the pits. Ricky was shaken but unhurt and the camera seemed to be OK but we didn't know if the camera had been operating when the race car hit the wall.

Several days later in Atlanta we received the film back from Duart Lab in New York City who did all our processing and printing and sound transfers. A very expectant threesome gathered around the Steenbeck as we went through the footage. Dave said he hit the switch activating the camera the split second the car headed for the wall. And that's what we got on film! An incredible, once-in-a-lifetime shot inside a race car of it hitting the wall at 100 mph! Dave had carefully rationed the 400-foot magazine of film during the race to capture racing and pit stop action with enough left for the climactic (although unfortunate) ending.

Several weeks later we had an NPR mounted inside a car driven by Ricky's father, David Pearson, one of the winningest race drivers ever. The action was on the very first lap in Mobile, Alabama. Our over-the-shoulder camera filmed Pearson coming past the starter's stand, a driver in front of him losing control, and Pearson quickly being hit by the fish-tailing car. Pearson did a complete 360-degree turn before coming to a halt. Again the on-board camera caught every bone-jarring second of the action!

"STOCKCAR!" is more than crashes. We mounted a camera inside Benny Parson's race car as he qualified at Atlanta International Raceway. With a radio mike attached to easygoing Benny, we filmed his comments as he came off the track. We were always in search of the off-hand, intimate remark by driver or crew member that would give an insight to the tremendous pressure they worked under.

We shot about 100,000 feet of film waiting for something to happen. Sometimes it did, more often it didn't. I used Eastman 7247 film stock throughout the production. Due to its 100 ASA rating I always carried a supply of 85ND filters. I can

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RIGGING AND LIGHTING A LOCATION COURTROOM

The idea was to use an actual courtroom, with the action being unrehearsed, unblocked and spontaneous—but with controlled lighting, separation, and an absence of hot spots and dark areas

By ALAN J. RITSKO

Make ten films in one year?

Sounds impossible.

Independently producing ten films in one year may sound somewhat improbable, but not impossible to the lawyer/instructor team of Eric Saltzman and Charlie Nesson of the Harvard Law School.

How about the subject? . . . Law, what else?

The money? . . . Ready and waiting.

The facts, that's right, only the facts.

This may seem a bit bizarre, but I assure you it's a careful reenactment of my first meeting with one of these producers when he introduced me to his ideas of a projected film series.

The idea was great. Harvard had just been awarded a grant to produce a package of ten educational films revolving around or depicting portions of courtroom cases in which evidence had been introduced in controversial or questionable ways.

The first of the series was to be a documentary filmed reenactment of a portion of one of these trials taken from the actual transcripts. The judge and lawyers were to be the same as those that tried the original case. The set was to be a real courtroom location; the action essentially unrehearsed, unblocked, and spontaneous.

As the producers started putting together a local Boston crew for the first shoot, it became apparent that the courtroom needed to be lit in a way which would not interfere with or destroy the feeling of realism produced through "The Walk-around Style" of shooting.

It was at this point that the realization of the lighting problems materialized. The lighting would have to produce a reasonably convincing atmosphere common to most courtrooms. At the same time, the controlled illumination had to provide an absence of hot spots and dark areas, a prerequisite for the style of shooting that was to take place. Furthermore, key action needed to be carefully lit to prevent the flatness and lack of tonal separation common to evenly (or softly) illuminated location interiors.

STYLE OF SHOOTING AND THE PROBLEMS OF LIGHTING

As more details for this "Lit Documentary" evolved, the location lighting problems were pinned down to specifics. And, as one might imagine, many of the lighting difficulties anticipated were a result of the *verité* style of shooting already chosen for the film.

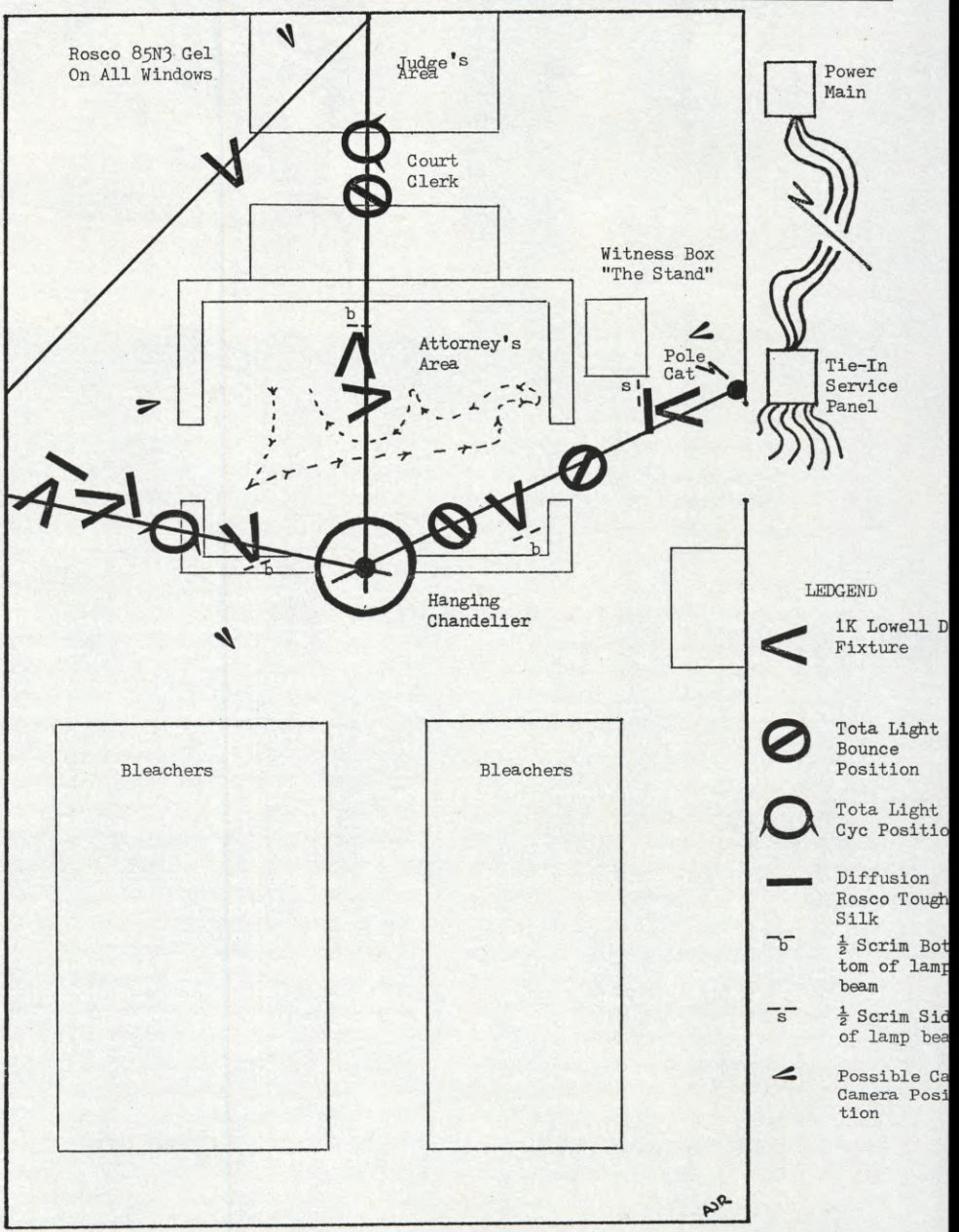
Two roving cameras would be utilized to record the action. Ceilings would be in frame at times, as would exterior windows.

Given these situations, the most difficult lighting problems would likely center around the need to rig the fixtures and wiring out of sight in such a way as to provide efficient illumination for the set and blocking without having to place restraints on the movement of the camera or the actors.

This was a unique situation from the lighting viewpoint. There were to be no fixed camera positions, as the two cameras were to simultaneously document the action from any number of possible angles.

To add to the complications, limits on the available electrical power, as well as on the time required to rig the set, had to be dealt with in considering solutions to lighting the location courtroom.

Diagram of the lighting plot plan—top view, showing the location of the lighting fixtures, the position of the grid, the camera angles and the subject movement.



THE STRATEGY

The strategy of rigging the lighting for the location was next worked out. Of course, stands and vertical lighting supports had to be eliminated as a viable means for hanging the lights, as their placement would have restricted the camera movement. Considering all the stipulations that the illumination was forced to concede to, it was decided that the set would have to be lit from *above*.

Locating the fixtures above the action would provide the directional and intensity control necessary to cover the wide range of blocking, as it would keep the fixtures and wiring out of the camera view. Naturally, the ideal location simulating these conditions would be a motion picture studio. The studio's overhead lighting grids would have easily solved the myriad of lighting difficulties associated with this type of shoot.

But there was no studio, no grid; only a location courtroom.

The rigging strategy, therefore, was to simulate studio lighting conditions by constructing a temporary aluminum gridwork on the location. The location grid would be "stretched" between the courtroom's walls high above the set. It would support the fixtures and wiring, and if its position was carefully chosen, enable ceilings to be included in some shots, provided that some limitations were imposed on pre-planned camera angles and blocking.

SELECTION OF A COURTROOM

Keeping the lighting grid in mind, we went out looking over area courtrooms. In selecting one from the lighting viewpoint my criteria included several requirements.

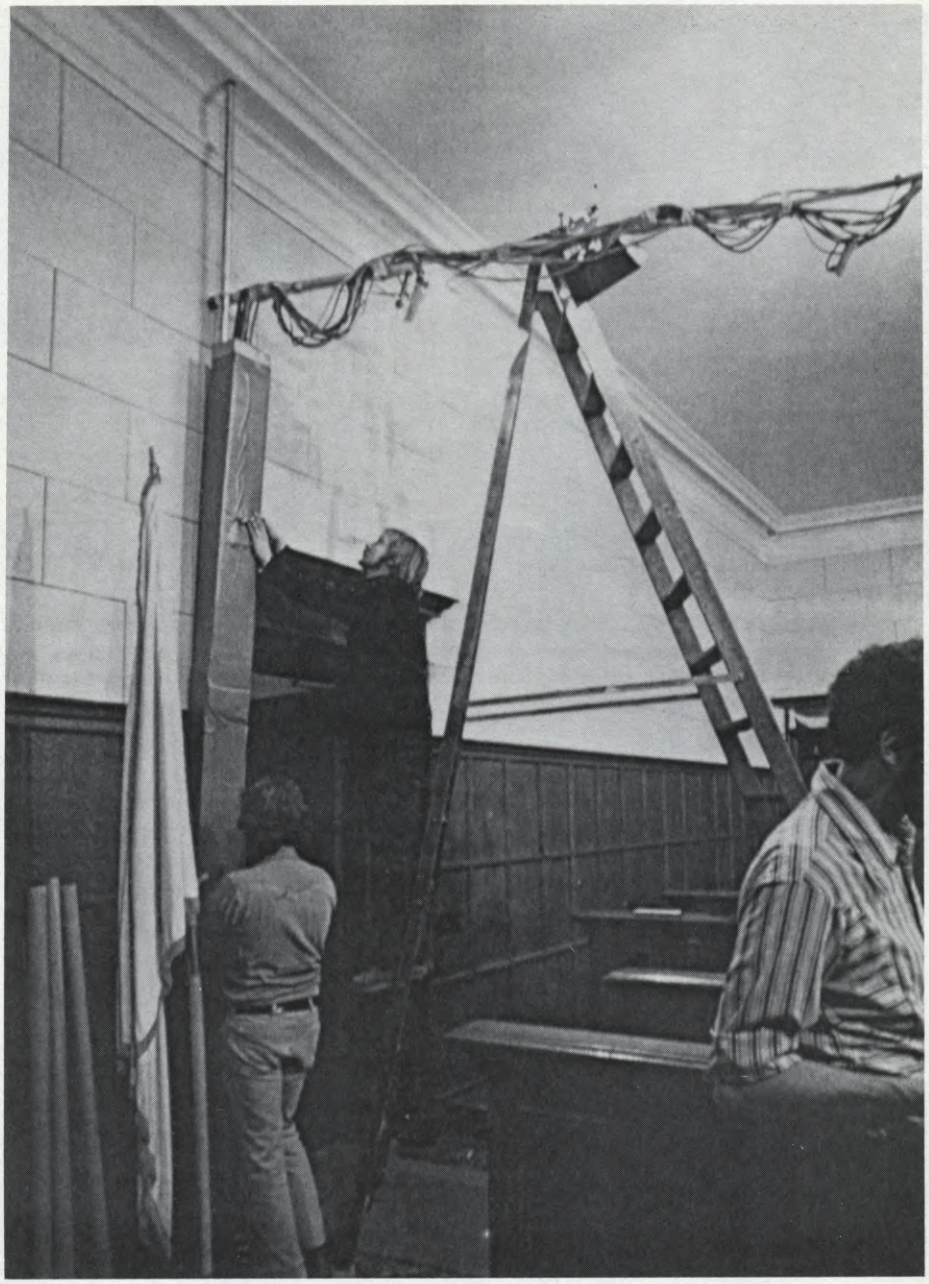
The room had to at least have a 14-foot ceiling so that the grid could be installed high above the action. Also, the room had to lend itself well to securing the structure to the walls. Furthermore, the courtroom would have to provide a midway anchor, so that any long span of rigging, stretched between two opposing walls, could be supported.

Other considerations had to do with the color of the ceiling and the materials used to cover the walls. Since some bounce illumination was to be used, a white ceiling was necessary.

The wall covering material was considered because many courtrooms we encountered were designed with dark wooden paneling. The shiny wood created two problems: it produced lots of specular reflection (glare) from the lighting and, it seemed to "absorb" illumination (much more so than lighter wall coverings).

The courtroom chosen proved to be a prime candidate for the successful implementation of the lighting style selected for the film. The ceiling was high and white. The walls were two-tone. They were paneled in a medium-colored wood halfway to the ceiling and were finished in a cream-colored plaster the rest of the way up.

It was a large room, about thirty feet wide. Luckily, though, hung from the ceiling in the center of the room was a mammoth chandelier. This chandelier was later to act as an anchor and a central support point from which the lighting grids would extend.

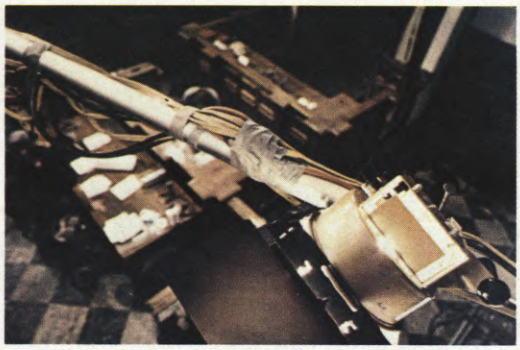


The load-bearing horizontal span carried all of the wiring traveling to the lights, and it also acted as a common junction point over which the entirety of the cabling dropped to the electrical tie-in. Reinforcement was unnecessary. A polecat was installed to stretch between floor and ceiling. It met the load-bearing span at the point where the wiring was to run from the grid to the floor.

CHOOSING A POSITION FOR THE GRID

Before deciding on the position for the grid, some limitations needed to be set regarding the camera and subject movement. Three basic camera "areas of view" were decided upon and the blocking set to be confined within a relatively small area. From this information, a lighting diagram was formulated to cover the movement, and to light the walls and action. The blocking and camera moves were worked around the need to anchor the suspended grid from the central chandelier. Again, concessions had to be made on everyone's part.

The actual locations for the horizontal grids were chosen to facilitate keying and cross keying the action from the individual subject's frontal positions. In other words, the lighting would be rigged on the grids to strike the actors from their front



(LEFT) For the horizontal gridwork, 1½" aluminum conduit was selected. It comes in handy 10-foot lengths (from any electrical supply house) and is threaded at either end. (CENTER) Lowell Quartz "D" focusing spots (with 1K bulbs) were chosen for keys and cross-keys. With a wrinkled reflector in each fixture, they offered a smooth directional light source. (RIGHT) The room was large—about 30 feet wide. From the ceiling in the center of the room hung a mammoth chandelier, which acted as a support point from which the grids were extended.

(LEFT) Each key was assigned a number which matched a corresponding switch at the tie-in. By calling out the numbers to the electrician at the tie-in service panel, it was possible to switch on any combination of keys. (CENTER) Action that was cross-keyed was illuminated with fixtures gauzed for diffusion. Rosco Tough Silk was used for this purpose. (RIGHT) Hung from the grid, eight Lowell "D" units were directed to key all the blocking and positions where the subjects were to remain stationary for any length of time.

(LEFT) Actors were to be placed in the bleachers, where there would be spots of glare from the lights reflected off the shiny lacquered furniture. (CENTER) Elsewhere, glossy woodwork near the primary action areas of the set was covered with removable dulling spray to spread out any specular reflections emanating from these areas. (RIGHT) The walls were lit with a combination of Lowell "D" units, plus five Lowell Tota-Lights.

as they blocked through their moves. This would provide a most efficient lighting pattern covering the action well, considering the number of camera angles from which it was to be filmed.

My original lighting plot sketch shows an overhead view of the courtroom, the lighting grid, the blocking and the basic camera angles.

SELECTING THE RIGGING AND HARDWARE

Everything selected to rig and light this location was chosen for weight and efficiency considerations.

For the horizontal gridwork, 1½" aluminum conduit was selected. It comes in handy 10′ lengths (from any electrical supply house) and is threaded on either end. Each piece has a built-in coupler which enables any length of pipe to be assembled simply by screwing numbers of 10′ pieces together.

Normally 1¼" aluminum conduit would be sufficient for most lighting grid needs, but in this case the span between the chandelier (central anchor) and the walls was too great to safely use the smaller diameter piping. Although the 1½" conduit is somewhat heavier than the 1¼" pipe, it doesn't bend as much under the weight of the lighting fixtures, even when screwed together in lengths of 25 feet or more.

The hardware chosen to hang the lights from the conduit was again selected in regard to its weight. Traditional cast iron pipe hangers, generally found in the studio, were much too heavy. Instead, small "C" type clamps (called Times Square clamps) with 5/8" mounting studs for fixtures, were used, along with the exceptionally lightweight and versatile Lowel Tota clamps.

LIGHTING STYLE . . . SELECTING THE FIXTURES

Although the lighting for the courtroom

was to be basically high key, the intent of the lighting style *was not* to produce a flat, "TV stage" appearance typically associated with an overlit late news show. On the other hand, the courtroom was not to look like a dramatic setting from an early "Perry Mason" either.

In choosing fixtures for the key lights, the lighting style, and the limitations imposed by the number and weight of the fixtures required, needed to be considered as the last step of the pre-planning procedure.

Overhead key illumination by soft lights was ruled out for several reasons. First, their illumination would have been overly omnidirectional in this case, failing to provide the control of the intensity needed for the tonal separation of the various parts of the set. Secondly, soft light tends to fall off quickly. With this location, due to the distance between the overhead grid and the action below, it was estimated that we would have needed more soft light fixtures (and more amperage and heavier wiring) to light the set to the same level of intensity, than we would have needed if direct focusing spots were utilized for this purpose.

Lowell Quartz D focusing spots (with 1K bulbs) were chosen for keys and cross keys. With a wrinkled reflector in each fixture, these keys offer a directable, smooth, directional light source ideally suited to location lighting. Also, the Lowell "D" 's are extremely lightweight and adaptable to a variety of necessary accessories.

Hung from the grid, eight Lowell "D" 's would be directed to key all the blocking and positions where the subjects were to remain stationary for any length of time. The walls were to be lit with a combination of "D" illumination, plus that from five Tota-Lights.

The Lowell Tota-Lights would be utilized in two different applications. Several grid-mounted Tota fixtures were to be directed toward the ceiling of the set to provide a base fill illumination to the blocking and main action areas.

Others would be positioned to specifically illuminate prominent back and side wall sections of the set. To achieve this, the fixture's reflectors would have to be set to their "CYC" or "Wall Wash" position, the lighting unit aimed directly toward the area to be illuminated.

Set areas and walls not within easy reach of the Tota-Lights' relatively short throw were to be lit by "D"s focused on spot to project the illumination deep into the location.

Now that the pre-planning had been done, the lighting strategy, the subject and camera blocking decided upon, the target days for the set up and shoot were arranged. We planned on two days to rig the grid, light and electrify the set.

INSTALLING THE GRID

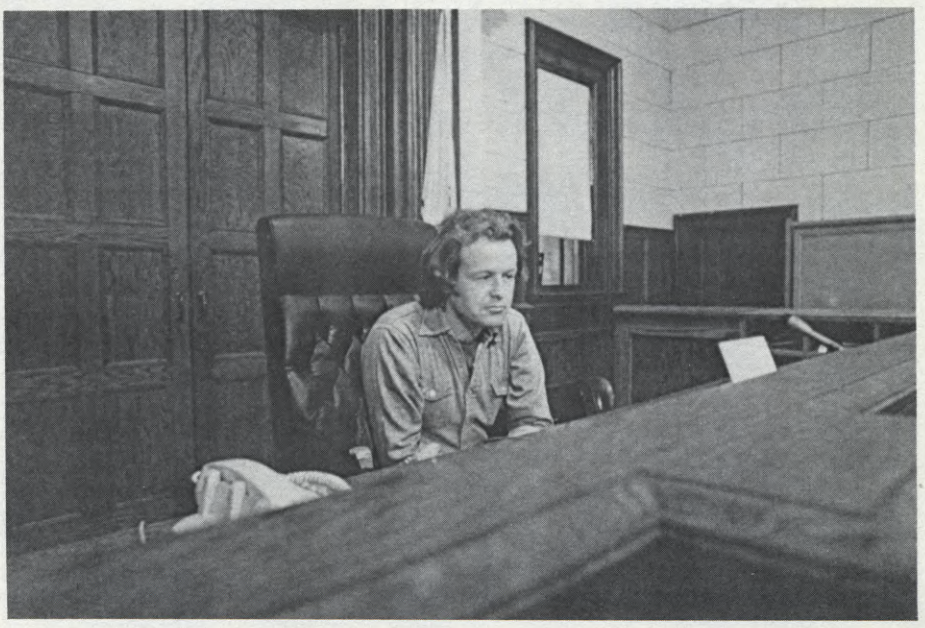
Actually installing the grid was a lot easier but much more time-consuming than we had anticipated.

Since the lighting grid was made up of four major sections of piping, each section (made of various combinations of ten-foot pieces of conduit) was preassembled on the floor of the room. The conduit was screwed together tightly and a quarter-inch hole was drilled in each terminal end of every span to facilitate anchoring the grid to the window or wall moldings.

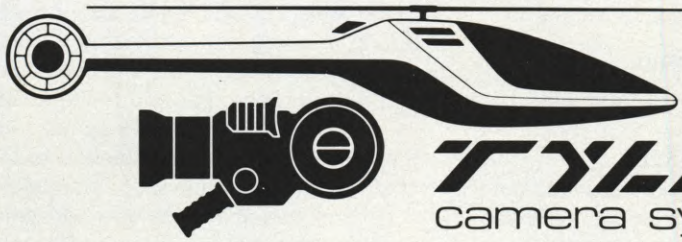
It was imperative that the grid did not damage or mar the interior trim or ceiling of the courtroom. Therefore, as each span was lifted into place, it was secured to the walls' ceiling height moldings with a long finishing nail hammered through the predrilled holes at the end of the conduit pieces. The other end of the spans were "C" clamped to a horizontal (and flat) decorative support attached to the chain which suspended the chandelier.

Up until this point the three horizontal spans of the grid were completely suspended, as they required no vertical poles for their support. The fourth span, however, was to be the load-bearing horizontal. Since it carried all of the wiring traveling to the lights, and it also acted as a common junction point over which the entirety of the cabling dropped to the electrical tie-in, reinforcement was necessary. Here we in-

Continued on Page 821



(ABOVE) Walls were illuminated to a level of 175 foot candles—only a half-stop under the exposure of the primary blocking areas. (BELOW) Any area of the set where subjects were to remain static for any length of time was lit by a single key, carefully positioned to fulfill the illumination needs, considering the variety of angles from which the subject was to be filmed.



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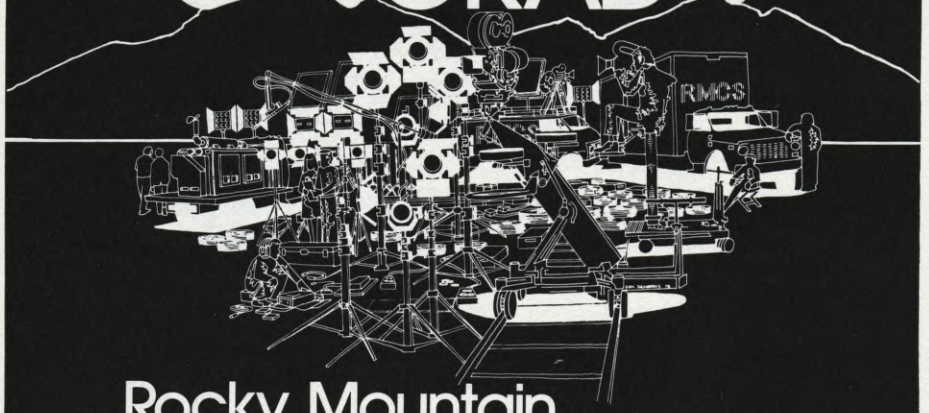

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WHAT'S NEW
Continued from Page 734

available anywhere of Super-8 sync sound and Super-8 Video production/post-production equipment, accessories, and supplies as well as publications and films.

The Catalog Contents Includes: Super8 Sound Recorders I & II; descriptions of the most versatile single and double-system sync cameras; crystal camera controls; both cable and crystal sync cassette recorders; production accessories such as camera silencers, automatic camera slates, lighting equipment and microphones; sound studio components; Super-8 editing machines such as the Super8 Sound Editing Benches and the MKM/Super8 Sound Horizontal Editing Table; sync projectors and interlocking DoubleBand projectors; Super-8 production and post-production system design; cables; Super-8 Video transfer equipment; Split-sixteen filmmaking; Lipton 3-D filmmaking; Super-8 publications and films; film stocks, magnetic stocks, and other expendable supplies; a basic Super-8 filmmaking glossary.

The Super8 Sound Catalog has always been more than just a hardware listing. It is a solid resource book providing basic decision making information to the experienced Super 8-filmmaker looking for tools, to the professional AV producer searching for low cost media alternatives and to the novice filmmaker seeking objective answers in an often confusing market place.

The Super8 Sound Catalog contains 88 (8½"x11") pages, 130 photographs and over thirty line-drawings. It is available for only $2 postpaid from Super8 Sound, Inc., 95 Harvey Street, Cambridge, MA 02140. The $2 catalog price may be used as a credit towards any purchase from the catalog.

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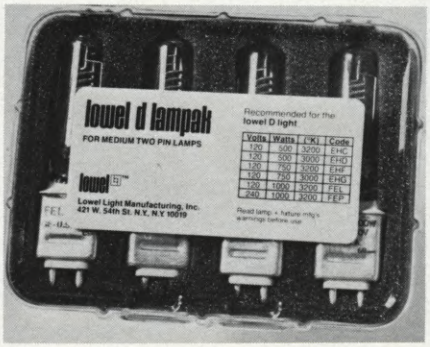
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Lowel-Light Mfg., Inc., maker of lightweight location lighting equipment for

motion picture, television and professional still photography, has introduced two new containers for safe, compact, storage of quartz lamps. The new Lowel Lampaks, for the Quartz-D and Omni-light systems, join the one currently available for Tota-light and Softlight 1500 lamps.

The small, clear plastic containers, share exterior dimensions of approximately 4½" x 5½" x 1½", and differ only in their labeling and interior foam cut-outs. The Quartz-D Lampak stores 4 lamps; the Tota-light/Softlight Lampak, 5; and the Omni-light Lampak, 6.

In addition to storage, Lowel Lampaks provide instant accessibility to, and identification of, the lamps inside. Each Lampak label shows the ANSI code, color temperature, voltage and wattage of the lamps recommended for use with that system. This takes the confusion out of determining the characteristics of these ANSI coded lamps.

Lowel Lampaks are available through all Lowel equipment dealers. For more information on these and other Lowel products, contact Lowel-Light Mfg., Inc. East Coast: 421 West 54 St., N.Y., N.Y. 10019. West Coast: 3407 W. Olive Ave., Burbank, Calif. 91505.

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Research Technology Incorporated has recently published a brand new 1978/79 catalog. Catalog includes RTI's complete line of RETEC supplies and accessories . . . everything you need to stock a complete film library/media center.

An economy line of portable cleaning units for filmstrips and 16mm/35mm/8mm films have been introduced.

A large collection of storage systems and supplies for video cassette tapes is included in the catalog. Users of video tape will be impressed with the new Video Tape Conditioner offered in three sizes.

A virtual "supermarket" of film repair equipment, splicers, labeling machines, 16mm reels and cans, shipping cases and media center furniture are also featured. RTI has a wide selection of media storage systems including the exclusive Retec Flexible Film Racks and Storage shelves.

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ELEVENTH MOTION PICTURE SEMINAR OF NORTHWEST

Continued from Page 768

Michael J. DeCourcey spoke about a series of 60-second "documentaries" for television which his company was currently producing. He illustrated his talk by showing several stunning spots recently completed to publicize the "King Tut Treasures" exhibit, which was just concluding a triumphant run in Los Angeles and was about to open in Seattle.

"GOING DIGITAL OR NOT?—PERSONAL VIEWS OF THE WHITNEY FAMILY"—Michael Whitney, who, along with his famous father (John Whitney, Sr.) and brother (John Jr.) specializes in computer-generated images, spoke about some of the latest techniques his family was exploring and illustrated his talk with several spectacular examples of his brother's work—by far the most technically smooth and artistically innovative computer footage this viewer has ever seen.

"YOU WORK ALL YOUR LIFE TO BE A SUCCESS OVERNIGHT"—World-famous for his superbly made and highly entertaining ski features filmed for the "lecture" circuit, Warren Miller gave a very down-to-earth summation of his own lengthy career, its agonies and ecstasies, and the amount of dedication, know-how and perseverance it takes to succeed in almost any phase of motion picture production.

"METHODS OF LOOPING AND ECONOMIC CONSIDERATIONS"—James O'Brien, Dialog Looping Director at Universal Studios, explained the process of post-recording to replace original dialog that is not of acceptable quality. At his studio this is done on the same day as the actual filming, in order to avoid the expense of calling actors back later. He illustrated his talk with "before and after" versions of a sequence which had to have all of its original lip-sync dialog replaced.

"VERNA FIELDS—AN UPDATE"—Making her second appearance at the Seattle Seminar, Verna Fields, Academy Award-winning editor of "JAWS" (and such other films as "DAISY MILLER", "PAPER MOON", "WHAT'S UP DOC?", "SUGARLAND EXPRESS" and "AMERICAN GRAFFITI"), told the audience about the first year in her new position as Vice President at Universal Studios, working mainly as close liaison executive between creative talent and management.

"THE DOLBY SYSTEM AND THE NEW FILM SOUND"—A progress report on the superior method of mixing and presenting motion picture sound which is gaining great acceptance in the industry.

The report was delivered by Ioan Allen, Vice President of Marketing for Dolby Labs, Inc.

In the evening, the Playhouse became once more the site of the annual "Seminar Showing of the Best in Northwest Produced Films". These were films which had to be produced by persons living in the Northwest; specifically: Alaska, Idaho, Montana, Oregon, Washington, British Columbia, Alberta, Saskatchewan and Manitoba. The entries this year were stunning and ranged from 30-second commercials to 30-minute short films. Of the whole spectacular lot, my favorite was the incredible "CLAYMATION", a behind-the-scenes look at the magic of Will Vinton's clay animation. It was obviously the favorite of the audience, also, as they voted it their one hundred dollar audience participation award.

The next morning, the Playhouse patio filled up early with people helping themselves to orange juice, coffee and rolls before the program began—which it did right on time.

"SHOOTING A PARTY WITH A 400 LB. LION AS FEATURED GUEST"—A kind of hilarious behind-the-scenes of the making of a commercial in which a lion roams about at a party, while the other guests try to act casual. The outtakes indicated that they were anything but. Paul Taylor, Seattle filmmaker expatriated to Hollywood, explained what everybody went through to get this "great idea" on film.

"THE EXPANDING HORIZONS OF COMMERCIAL FILM"—Veteran film executive Gordon Stulberg explained that by "commercial" he really meant the theatrical feature film, and went on to paint a most optimistic picture for its future, based on the many ancillary sources of income that are now possible attendant to feature production (network sales, syndication, pay TV, etc.).

"FROM THE AGONY TO THE ECSTASY"—And who should know better than Jeannot Szwarc, director of "JAWS 2"? With a picture that seemed jinxed from the very start, he stepped in on short notice after the originally assigned director had departed and slogged his way through a year of endless production problems. He showed an enormously exciting trailer for the film, which indicated that the "ecstasy" phase was about to begin—at the box-office.

At lunch time a capacity crowd filled the huge Seattle Center Exhibition Hall to enjoy the annual Seminar Luncheon, with famed Hollywood producer/director Stanley Kramer as keynote speaker. Now a permanent resident of Seattle, along with his family, Kramer delivered an amazingly candid speech in which,

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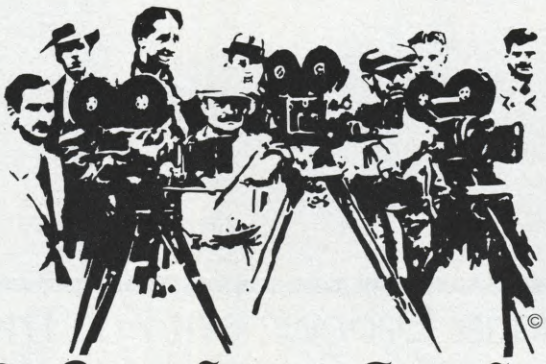

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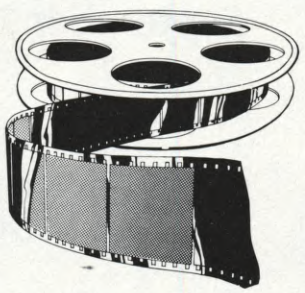

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For applications contact:
The Short Film Showcase
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among other things, he said: "I know that social issues have dominated my life too much. I don't feel myself a film artist in full expression. My canvasses were too big. I grew up in the Franklin Roosevelt era of tremendous social change in America, and to me entertainment represented dramatization of that social change. On her brightest morning—even using fewer words that she usually does—Pauline Kael could never be as critical of me as I am of myself, in terms of where I am and what I'm trying to do—because I'm not even sure today of where I am and what I want to do. I'm not sure because look what has been happening to us during the last couple of decades (and as filmmakers, we review these things constantly). We've had three major assassinations, Watergate, Korean and Vietnam wars, and a man has walked on the moon. Any one of these things in a decade would be enough to mark that decade for a century. How do you approximate where you are in the vortex of events, when so much has whizzed by the back of your head? How do you sort out your values?"

Kramer indicated that he had sorted them out to the extent of moving to this beautiful city from Hollywood and that he now intended to make feature films in the Northwest, with one slated to start production immediately.

"I'm making a film locally," he said, "and I've wanted to make that film to prove a point—that perhaps with luck, with chemistry, a quality piece of merchandise could be made here at a price that would break the inflationary spiral."

Everyone there silently wished him luck.

Back to the program, John Dykstra, leader of the special effects team that won the Academy Oscar for "STAR WARS", had been slated to speak on "SPECIAL EFFECTS—THE ART OF FILMING THINGS THAT DON'T EXIST". However, a near-disastrous plane crash, from which he emerged miraculously unhurt, nevertheless left him so shaken that (understandably) he felt that he could not appear as scheduled. Instead, with only a few hours' notice, two of his colleagues, Robbie Blalock and Jamie Short, flew up to Seattle to fill in for him—and did a beautiful job of it.

"STAR WARS" was also well represented by Richard Chew, one of its three Academy Award-winning editors, who spoke on "MAKING IT MOVE". He illustrated his talk by showing a sequence from his latest film, cut three different ways.

"HOW A DIRECTOR OF PHOTOGRAPHY WORKS HAND-IN-HAND WITH THE SPECIAL EFFECTS DEPARTMENT" featured Vilmos Zsigmond, ASC,

fresh from winning the Academy Award for his lensing of "CLOSE ENCOUNTERS OF THE THIRD KIND". He paid special tribute to Douglas Trumbull, whose technical wizardry did, indeed, make the impossible happen in "CLOSE ENCOUNTERS".

But then Doug Trumbull spoke for himself about the production (and showed some fascinating film clips), but indicated that there are even more startling things to come. He was referring to a presently hush-hush process which he has been developing and which he feels will revolutionize current methods of presenting films.

At that point the session was thrown open to questions from the audience and the Seminar speakers could have stayed for hours answering them, so great was the interest shown.

But there was an evening program, which included the sneak preview of a new Canadian feature, "MARIE-ANNE", and a screening of the new extended version of "AMERICAN GRAFFITI", projected with Dolby sound that had been installed at the Playhouse especially for the occasion.

And then the Eleventh Motion Picture Seminar of the Northwest was over—and all too soon. It had been a marvelous two days, and congratulations are due the many people behind the scenes who, working unpaid, gave so generously of their time and efforts to make it come together so smoothly and happily.

I left Seattle, as always, a bit sadly—but with one consolation: the announcement had been made that next year's Seminar would be held on June 1 and 2.

Something very definitely to look forward to. ■

ELEVENTH MOTION PICTURE SEMINAR OF THE NORTHWEST PROGRAM FRIDAY, JUNE 2, 1978

8:00AM 9:00AM
Registration

9:00AM 9:10AM
Introduction, Arthur Coburn, Moderator

9:10AM 9:30AM
Restoration of 35mm Nitrate Film to 16mm Safety—Lew Cook

9:30AM 9:45AM
Tutankhamun: Mass Education and Entertainment — Michael DeCourcey

9:45AM 10:10AM
Going Digital or Not? - Personal Views of the Whitney Family — Michael Whitney

10:10AM 10:30AM
Coffee Break

10:30AM 10:55AM
The Independent Filmmaker Program and Other Projects of the AFI — Jan Haag

10:55AM 11:25AM
Feature Film Financing and Legal Considerations—

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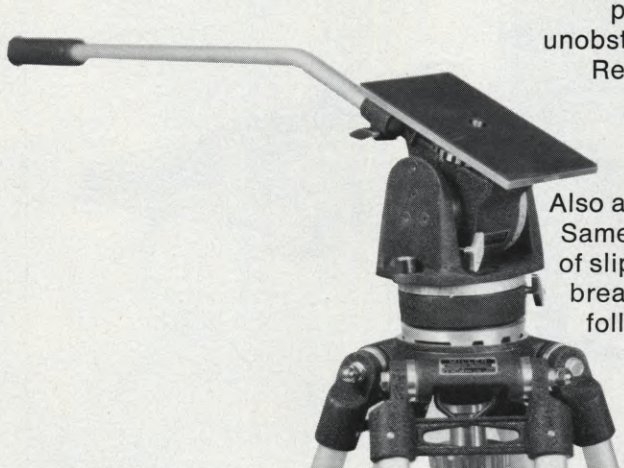

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11:25AM 11:55AM
You Work All of Your Life to be a Success Overnight — Warren Miller

11:55AM 1:15PM
Lunch

1:15PM 1:35PM
Humanism, Economics and Movie Moguldom — Karl Krogstad

1:35PM 2:05PM
"Docutainment" - Elements of Show Business Applied to Documentaries for T.V. — Pen Densham

2:05PM 2:25PM
Music Makes the Whole World Buy — Charlie Watts

2:25PM 2:50PM
Distribution: The Key to Success in Filmmaking — Fil Fraser

2:50PM 3:10PM
Break

3:10PM 3:40PM
Methods of Looping & Economic Consideration — James O'Brien

3:40PM 4:20PM
The Dolby System and the New Film Sound — Ioan Allen

4:20PM 5:05PM
Verna Fields - An Update — Verna Fields

8:00PM 11:00PM
Showings of the Best in the Northwest Produced Films

PROGRAM SATURDAY, JUNE 3, 1978

8:30AM 9:00AM
Registration

9:00AM 9:10AM
Introduction, Arthur Coburn, Moderator

9:10AM 9:30AM
The Ins and Outs of the Film Workshop Program — Bob Nichol

9:30AM 9:50AM
Shooting a Party Scene with a 400 lb. Lion as Featured Guest, or When the Director's Not the Boss, or I Wish I'd Been Somewhere Else That Day — Paul Taylor

9:50AM 10:10AM
The Filming of "Spartree" and How it Was Done — Phil Borsos

10:10AM 10:30AM
Coffee Break

10:30AM 11:00AM
1980 and Beyond - The Expanding Horizons of Commercial Film — Gordon Stulberg

11:00AM 11:30AM
Use of Film and Tape and Advanced Special Effects in TV Commercial Production — Greg Snazelle

11:30AM 12:00PM
From the Agony to the Ecstasy — Jeannot Szwarc

12:00PM 12:05PM
Film Presentation Award

12:05PM 2:00PM
Luncheon - Exhibition Hall, Seattle Center
Keynote Speaker, Stanley Kramer, Stanley Kramer Productions, Bellevue, WA

2:00PM 2:50PM
Special Effects - The Art of Filming Things that Don't Exist — John Dykstra

2:50PM 3:35PM
Making it Move — Richard Chew

3:35PM 4:00PM
How A Director of Photography Works Hand in Hand With The Special Effects Department — Vilmos Zsigmond A.S.C.

4:00PM 4:45PM
Special Effects, Today & Tomorrow — Douglas Trumbull

4:45PM 5:00 PM
Q & A (The filming of Close Encounters of the Third Kind)

8:00PM 12:00
Selected films by Seminar speakers with personal comments. Also shown will be a sneak preview of the new Canadian feature "Marie-Anne" and the new extended version of "American Graffiti" in Dolby Sound

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tems. Furthermore, a film of this type is completely compatible with unconverted equipment: its quality when projected with monaural equipment is at least as good as that of a monaural film produced to Academy specifications. Therefore, we decided that this two-track, three-channel system is the most practical and the best one to adopt.

After exposing the negative, all processing and printing operations are the same as for monaural film. These developments add no additional production costs after exposure.

After completion of our testing of the stereo optical 16mm system, we lent the recorder to the EMI Elstree Studios, Ltd., in England for extensive testing. EMI converted this equipment to the 35mm format.

Cooperation with Dolby Laboratories, Inc.

When we informed Dolby Laboratories, Inc., of our use of their equipment in our research, we found that they also had been working to adapt their equipment for use with optical sound tracks of films. Their work had been with monaural tracks. The two companies have cooperated in further developments.

Dolby Laboratories has agreed with our conclusions that the two-track, three-channel system is the best choice. They have developed specialized packages of equipment for film producers and for theaters. A typical theater package includes a stereo solar cell for each projector, two preamplifiers, Dolby A-type noise-reduction circuitry, and theater equalization. Conversion frequently requires the installation of additional power amplifiers and speakers. In addition to providing equipment, Dolby personnel provide installation, testing, and adjustment services to fully convert theaters to the new two-track, three-channel capability.

When surround capability is wanted, matrix encoding is performed during production. An optional surround module in the theater decodes the signals and operates the surround amplifier and speakers.

Dolby Laboratories is arranging with various producers and studios to have the system used in prominent films.

With a vast number of projectors in existence, compatibility with them is important. Both the stereophonic tracks and the noise reduction are compatible. For films such as "STAR WARS", "A STAR IS BORN" and "CLOSE ENCOUNTERS OF THE THIRD KIND", this

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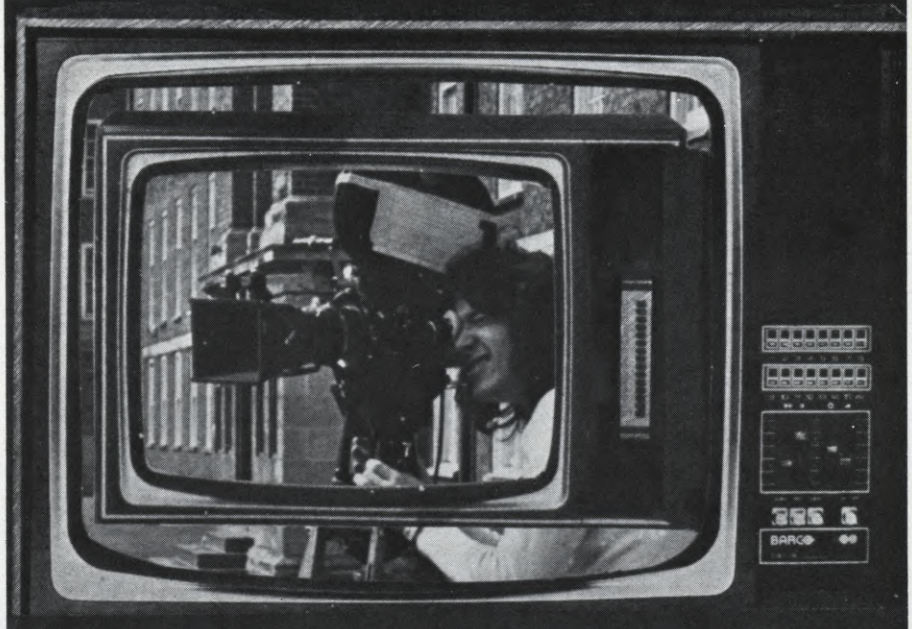

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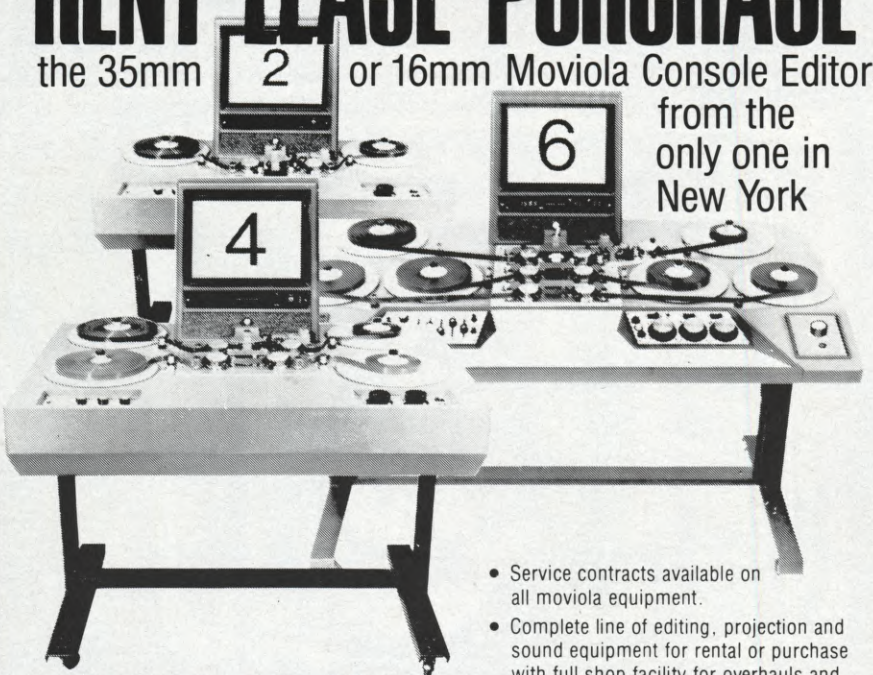

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allows common 35mm prints with stereophonic photographic sound tracks to be exhibited with their full potential wherever possible, and also to be exhibited monaurally in the much larger number of theaters not yet converted to the new capability.

The pre-emphasis, or coding, of low-level sounds is intended to be de-emphasized, or decoded, during projection of the film; if it is not, however, the only noticeable difference in the sound is a little extra brightness. Even this can be subjectively eliminated simply by adjusting the tone control. The general quality is at least as good as with a non-Dolby film.

Non-Stereo, Dual-Track Applications

In late 1976, we began research on the potential application of two-track photographic sound systems for non-stereo uses, particularly for dual-language films.

Most films for educational, sales, or training purposes are in the 16mm size. Conversely, most 16mm films are produced for such purposes, and not primarily for entertainment. The quality of sound is not as important as in most 35mm films. Therefore, the cost of conversion of existing 16mm equipment to stereo usually would not be worthwhile, and the market for stereo films of this size seems limited.

For dual-language films, however, the potential market appears much more extensive, and is likely to consist almost entirely of the 16mm format because of relative costs.

The total width of the two stereo sound tracks and their separation, on 16mm film, is 0.060 inches, or 1.52mm. The separation of 0.010 inches, or 0.25mm, is the same as on 35mm film; to have a smaller separation than this causes a cross-talk problem.

Each track has about 42 percent of the width of a standard monaural track. The output signal level of each track is 7.6 dB less than that of the mono track, and the noise level is less also. The net loss in signal-to-noise ratio is only about 3 or 4 dB. Turning up the volume, because of the lower output level, also increases the noise level, but much less proportionally than the decrease in track width. The decrease in quality is so slight that it probably would be unnoticeable in most 16mm projection situations, especially with the projector in the same room with the viewers.

Whenever a better quality is wanted, Dolby noise reduction, either A- or B-type, could be used.

To project non-stereo, dual-track films, a stereo projector may or may not be needed. Some films require playing both

sound tracks simultaneously with a stereophonic projector. Others, such as dual-language films, only require one track or the other.

For applications using only one track at a time, we have developed a small movable mask to block the unwanted track during projection. The mask enables the projector to play either sound track or both monaurally. The Kodak Pageant Dual Language Adapter is easy to install on a Kodak Pageant projector. Its cost, probably about $45, is much less than converting to stereo.

The Future

In the entertainment field, we expect that many major films will adopt the luxury and economy offered by two-track, three-channel photographic sound with noise reduction.

The greatest potential for 16mm films with two-track sound probably is in dual-language uses, rather than in those with stereophonic sound. Other potential applications of dual-track films are many. A medical film could have one sound track with medical terminology and the other with terminology for laymen. A film for use in more than one language could provide dialog on one track, and sound effects and music on the other. People in other countries or areas could provide native dialog, live or on tape, while using the other original track with sound effects and music. Alternately, film copies could be made, dubbing-in the replacement dialog. For a bilingual audience, a stereo projector could play the language of the majority over the room speakers and the second language over an earphone network by wires or low-power FM transmission.

Although we don't expect television with stereo sound in the near future, this technology for television films is waiting. Also, many television broadcasters are purchasing video recorders which have stereo capabilities.

Our development work in multiple channel, photographic sound tracks is one of the many efforts at Eastman Kodak Company to improve photography for all users and viewers. The company spends about one million dollars per day on research and development. This exciting work is an investment in the future, and we are very pleased to be involved in it. ■

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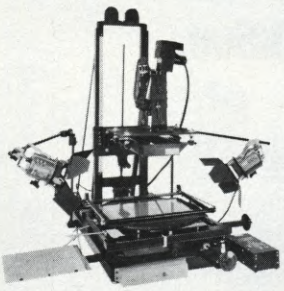

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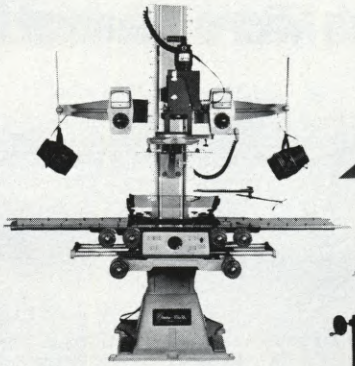

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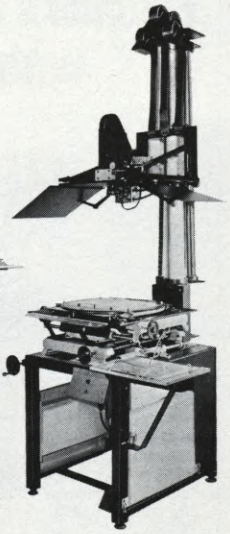

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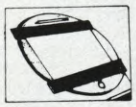

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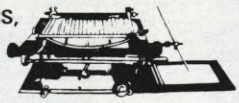

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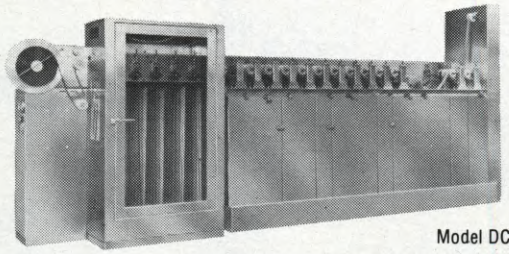

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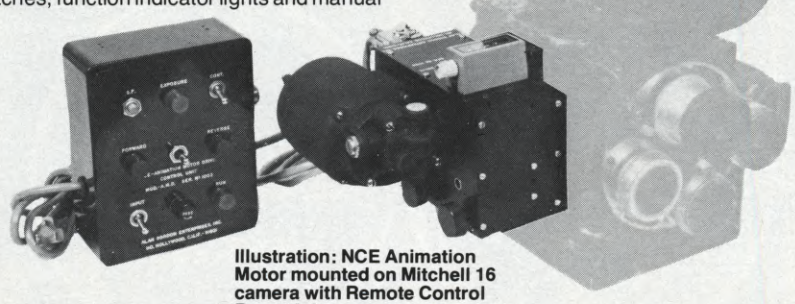

Illustration: NCE Animation Motor mounted on Mitchell 16 camera with Remote Control Box at left.

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1980 AND BEYOND
Continued from Page 775

300 million dollars.

Those figures represent not what the subscribers will pay in cable TV charges, but rather the approximately 40 percent that will go to the companies that license films to the cable operators. The profile of the pay TV viewer is so dissimilar to that of the typical Friday, Saturday or Sunday night moviegoer, that it is anticipated that there will not be much more than a 15% to 20% overlap. Indeed, we have statistics that indicate that people who have seen a feature in a theater will watch it again and again on their own pay TV channel if they like it.

So, what we have to look forward to in the next several decades is more and more theatrical motion pictures made by young filmmakers from all over the United States and, indeed, from all over the world. The fact is that the economic input from the various ancillary media is of such an extraordinary size that the next 20 years will probably be the "Golden Age" of theatrical motion pictures. ■

(EDITOR'S NOTE: The foregoing has been excerpted from a talk delivered by GORDON STULBERG at the Eleventh Motion Picture Seminar of the Northwest, held recently in Seattle. Mr. Stulberg has been in the motion picture industry for 20 years, serving as President of Cinema Center Films, Vice-President and Chief Operations Officer of Columbia Pictures and President of Twentieth Century-Fox. A practicing attorney, he is a member of the law firm of Mitchell, Silberberg and Knupp, Los Angeles.)

ASC CINEMATOGRAPHERS AVAILABLE FOR SEMINARS, LECTURES, INFORMAL DISCUSSIONS AND QUESTIONS & ANSWERS SESSIONS

The following members of the American Society of Cinematographers have indicated their availability to appear for seminars, lectures, informal discussions and questions and answers pertaining to motion picture and television photography, lighting, special photographic effects and production in general: L. B. "Bud" Abbott, Lloyd Ahern, Taylor Byars, Stanley Cortez, Victor Duncan, Linwood Dunn, Daniel Fapp, George Folsey, Lee Garmes, Richard Glouner, Burnett Guffey, John L. Hermann, Gerald Hirschfeld, Winton Hoch, Michel Hugo, Richard Kelley, Milton Krasner, Vilis Lapenieks, Andrew Laszlo, Jacques Marquette, Richard Moore, Sol Negrin, Frank Phillips, Owen Roizman, Joseph Ruttenberg, Howard Schwartz, Richard Shore, Frank Stanley, Alan Stensvold, Mario Tosi, Ted Voigtlander, Harry Wolf, and Vilmos Zsigmond.

Arrangements as to availability and other details are to be made directly with the individual A.S.C. member. For further information, contact: American Society of Cinematographers, P.O. Box 2230, Hollywood, California 90028. Telephone: (213) 876-5080.

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THE "ONE-MAN BAND" AS COMPLETE PHOTOJOURNALIST

Continued from Page 779

look for the story in the average man, the guy you don't normally see on television."

To find his stories, Hatteberg combs the weekly newspapers of small towns all over Kansas. Other ideas arrive by telephone as tips from viewers who are fascinated by the doings of their own neighbors and relatives. Hatteberg follows up these leads, and schedules visits with Kansans that always bring him new friends, and nearly as often develop into solid news features, as well.

Hatteberg has visited with the national skeet shooting champion who lives in Wichita, but had been ignored by the local media. He spent time with three generations of women who live on a Flint Hill farm and help their menfolk round up cattle. Stories of this sort, which can run up to 10 minutes, are showcased in KAKE-TV's "Second Tuesday" program, a 30-minute magazine show presented as the 6:30 p.m. lead-in to "Happy Days", one Tuesday each month.

Many of Hatteberg's "Second Tuesday" segments found their way into his NPPA entry. "The Mayor is a Biker" showed the civic concern of a 21-year-old, bearded, motorcycle-riding youth who was elected mayor of a small Kansas town. The man, exactly the type of young person often condemned by stereotypes, was portrayed sensitively as an intelligent, involved citizen. Rather than stand the mayor up in front of town hall, Hatteberg filmed the blue jean-clad official as he walked through the town and commented on its problems.

"I'd never use a sound bite of two or three questions in a row, with the subject standing stiffly in front of a wall," Hatteberg says. "I use natural sound under a cart intro for each question, and lead out of the question with another cart. The voice-overs tie the story together much better than a reporter doing a stand-up ever could."

Because he works on an entire story from its conception, such tight transitional control has become almost second nature for Hatteberg.

"That's why I'm concerned about the apparent demise of the photojournalist," he says. "This sort of work provides the opportunity to cover news the way it should be covered. We need more emphasis on basics, and less on technology. Too much of the live coverage I see has been a return to the talking head in front of the courthouse. Television news has the ability to take viewers to the scene for an intimate meeting with the newsmaker. Getting a story on the air 15 minutes sooner is not often worth giving that up." ■

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THE FILMING OF "STOCKCAR!"
Continued from Page 801

truthfully say I never lost a shot due to exposure changes while filming under constantly changing light conditions.

A visit to Washington, D.C.'s National Archive yielded some unusual footage of racing years ago on the beach at Daytona, Florida. Much of this fascinating footage was shot in the late 40's and early 50's on 35mm nitrate-based film. Prints were not available so I ordered 16mm reduction prints to view the footage. We used this exciting footage to intercut with scenes of retired champion drivers talking about the good old days of racing. The footage also showed that in the early 50's there were several women who raced against the men. Janet Guthrie is now the only woman racing full time on the stock car racing circuit.

We filmed Janet at Dover, Delaware, and Ontario. She was a pleasure to film and Janet graciously allowed us to put a camera in her car. The most unique aspect of filming racing events is that you have to be constantly on the alert to capture that special moment that exemplifies the essence of racing. To catch such a moment (or moments) is, to me, the real challenge of documentary filmmaking. At Ontario Janet was running in 7th position and doing very well when she came roaring into the pits with a problem. I moved in as close to her as I could to film her yelling at her crew. (Everyone yells due to the noise of the race.) When Janet started to pull out of the pits, one of the NASCAR officials stopped her and there was more yelling. Then she slowly drove off. As I held my shot I could see the left rear wheel at an awkward angle. She had broken the axle. As a director, I knew I would need coverage of Janet in the garage area with her damaged car to complete the sequence.

As a cameraman, I shouldered my ACL and raced (as only one can race carrying an ACL, battery, and light meter) 80 yards through the jammed pit area, in and out of the garage tunnel, and was just catching up with Janet's car when she stopped. I halted, held my breath, zoomed in as she climbed out of her car, stared at the wheel, took off her helmet, and flung her arm in dispair! Cut. As an editor I had it all. Low budgets make fast runners out of cameraman-director-editors!

Throughout the production I interviewed all the featured drivers and the transcripts were provided Dave for use in formulating the script. He had the difficult job of trying to tie all the loose ends into a logical sequence of events. He also carried a Nagra recorder during the production and became adept at strapping the unit into race cars in order to record the

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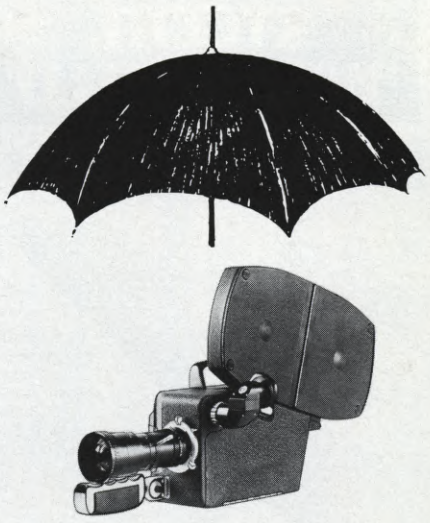
race cars at speed.

Interiors constitute about ten percent of "STOCKCAR!" A drivers' meeting in a dark, closed garage area was lit with four 1Ks. The other interiors had some sunlight, a lot of fluorescence, and were lit with small Lowel-Lights fitted with dichroic filters. Race car owner Bud Moore's Spartanburg, S.C., garage was the scene of an interior sequence featuring super closeups of engine cylinders, valves, and pistons. Shot with a number three diopter on a 25mm lens, the resultant ethereal montage ended with the engine coming to life on Bud's dyno. Junie Donleavey's crew was filmed in their Richmond, Virginia, garage as they discussed their near misses in attempting to win races. We edited a montage of accidents intercut with Junie's hard-working crew repairing their race car. By using the 7247 we were able to keep the lighting to a minimum and experienced no problems due to this budgetary consideration.

Dave, Glenn, and I all agreed that the highlight of the non-racing coverage was Richard Petty's annual open house he holds for his race fans in his Randleman, N.C., garage. We filmed "King" Richard, the incredible winner of 185 races, graciously signing autographs for six hours, allowing fans to visit his huge home, conducting tours of his racing compound, and never once losing his charismatic smile while 15,000 devoted fans paid homage to him.

The Daytona 500 was the last race we filmed. The end of "STOCKCAR!" comes as the race begins and our helicopter shot by Al Aubiel of Orlando pulls back to reveal the entire track and crowd of some 100,000 race fans. We used this all-encompassing scene to roll our end credits over. After completing this shot, we returned to Atlanta and began to fine cut the film from rough cuts Glenn and I had assembled during our earlier shooting. Glenn worked on the upright Moviola, I labored on the Steenbeck, and writer David pounded on his Smith-Corona. The editing process was like panning for gold as we continually viewed the footage for that special shot of footage that would provide us with a good transitional scene.

A needed bit of magic was provided by Atlanta's Ojeda Penn, an incredibly gifted musician with a background in jazz, whom I first heard several years ago in Washington, D.C. Ojeda quickly sensed the mood I wanted for "STOCKCAR!"; an earthy, natural sound, not the overdone guitar, banjo, and harmonica so often used in films based in the south. To say that Ojeda's unique music helped the film is an understatement. One film



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review said, "Slow-motioning, which usually comes off as a cliche in racing films, looks fresh in the 'STOCKCAR!' sequence in which pit stop battalions do their thing while a vaguely 18th-century trumpet fills the sound track."

"STOCKCAR!" was mixed at Lanco sound in Atlanta and the 35mm blowup was done in New York City at EFX's Unltd. by Joel Hynek and his tireless colleagues.

Our opening credits were affixed onto equipment found in the racing environment: a pit board, jack, tool kit, etc. The artwork was designed by Howard Penchesky, a Virginia sign painter by trade and a member of Junie Donleavey's race team. Howard also paints race cars and he brought to the titles a style indigenous to stockcar racing.

The premiere was held deep in stockcar racing country, Charlotte, S.C. Good friend Ben Adams flew down from Lansing, Michigan, to keep me company while Dave and Glenn sat next to California telephones awaiting the audience's verdict. The local paper headlined its review with " 'STOCKCAR!' Runs Strong, Comes Home a Winner!" Without identifying myself I talked to a number of people after screenings in the theater lobby and all their comments were positive. Since auto racing is the second largest spectator sport in America, it appears there is a large audience for "STOCKCAR!"

Although "STOCKCAR!" was difficult to produce, due to its low budget and never knowing what was going to happen, I found the experience exhilarating and meaningful. The racing crowd is a special one and I grew to have a deep respect for the drivers and their crews. They are unique, hardworking people, and almost without exception, gracious and kind to their fans and the general public. I was most anxious that they felt my portrait of them was a true one and I'll always remember the remark of a young, hardworking race team member after he saw the film in Charlotte. "You know," he said, "that's the only film I ever seen that showed racin' like it really is". ■

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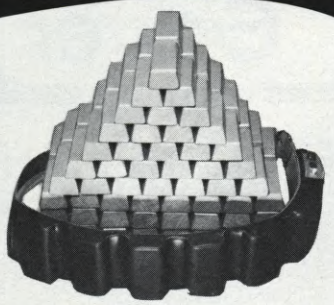

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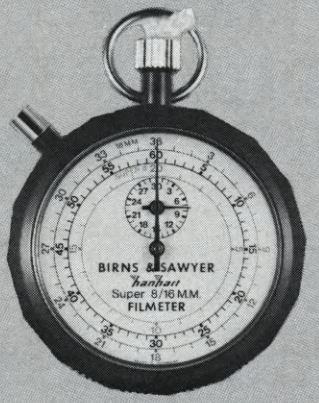

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LIGHTING A COURTROOM
Continued from Page 805

stalled a pole-cat stretched between the floor and the ceiling. It met the load-bearing span at the point where the wiring was to run from the grid to the floor, and was bolted to the "hanging" grid for an added measure of stability and safety.

ROUGHING IN THE LIGHTING AND WIRING

As soon as the lighting grid was completely installed the lighting fixtures and the wiring were hung in place.

Working from my lighting plot the gaffers roughed in the fixtures one unit at a time. As each was attached (to the Tota clamp or Times Square clip) and mounted to the conduit, every fixture was adjusted to cover the area it was intended to illuminate, striking the action from the predetermined angle. At this point the emphasis was placed on the coverage of the illumination and not the particular intensity of the light. Illumination intensity would not be set (smoothed out) until stand-ins could block the scene later on when the fixtures could be adjusted to their working brightness.

During the roughing in procedure we worked on a darkened set. Since each direct key fixture was connected to a single breaker at the location tie-in, aiming and positioning the keys was an expedient task. Each key was assigned a number which matched a corresponding switch at the tie-in. By calling out the numbers to the electrician at the tie-in service panel, we were able to selectively switch on any combination of keys to check their positioning and overlap.

Since all of the cabling to each of the fixtures also had to be hung from the grid, the weight of the wiring was a problem to be considered. Fortunately the tie-in's service panel was located just outside the courtroom's side door, within a few feet of the position where the wiring from the grid traveled down to the floor via the polecat. The proximity of these two points enabled us to use lightweight AWG #16 3-wire stringer cable for "extension cords" to connect the grid-mounted lights to the power source.

The 13 1K fixtures drew a total of 127 amperes. Without an appreciable voltage drop through the wiring, the color temperature of the illumination metered on the set was close to 3200°k.

BALANCING THE ILLUMINATION "FINE TUNING" THE LIGHTING

When "fine tuning" the lighting in the courtroom, I was concerned with several factors: Balancing the illumination to the working level predetermined for exposure purposes, setting appropriate

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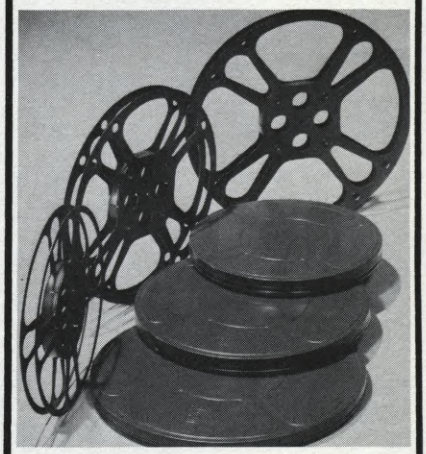

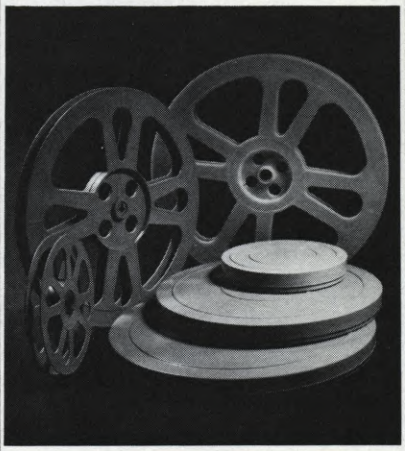

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exposure ratios between selected areas of the set, and removing (or avoiding) multiple shadows from subjects that might be filmed in close up.

The film stock chosen for the shoot was 7247. We decided to aim for approximately 250 footcandles for the main blocking areas which would yield an effective aperture of f/4. To balance off the illumination to this level, all the previously roughed-in fixtures were switched on. As I walked the actor's block with a meter in hand, each of the keys illuminating that area was brought up or down in intensity until the desired exposure level was achieved.

As the gaffers were focusing the Quartz D fixtures in and out for intensity leveling, they also installed frames and barndoors on the lights that needed to have their spread further controlled.

Action that was cross-keyed was illuminated with fixtures gauzed for diffusion. Rosco Tough Silk was used for this purpose, due to its ability to soften the multiple shadows created by the overlapping keys without destroying the directional characteristics or the quality of the illumination. Shadows were noticeable, but weren't harsh. Also, at the same time, the silk permitted a few specular highlights to radiate from the set. This was a great advantage in maintaining the crispness desired to highlight the shots.

In some instances *single* keys were positioned to illuminate rather long subject movements. In these cases ½ scrims, placed in the filter holders toward the bottom of the lamp beams, cut the intensity of the area lit nearest the fixture. While the illumination reaching the farthermost section of the subject movement (which the single key was intended to light) remained unaffected; the exposure level across the entire length of the block was balanced free of "hot spots".

As soon as the keys lighting the primary subject positions and blocking were balanced for exposure level, the background and side wall directed key lights were to be "fine tuned".

It was my intention to keep the back walls of the courtroom down a bit (in exposure) from the level of the primary blocking areas for the purpose of tonal separation. In order to preserve the high-key mood of the lighting in such instances, normally I would work toward achieving a 2-to-1 exposure ratio between these two areas of the set. In this case, though, the wooden walls appeared to reflect a lot less light than most medium-colored surfaces. Therefore, these walls and similar backset areas were illuminated to a level of 175 footcandles, only a half-stop under the exposure of the primary blocking areas.

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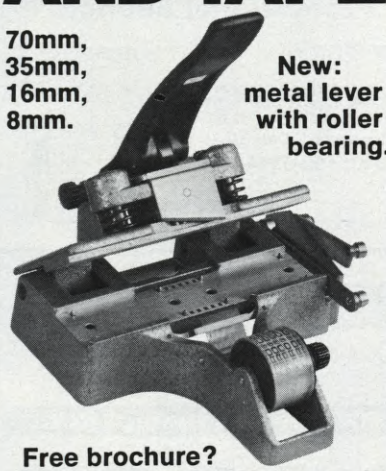

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Having set and balanced the illumination, the last problem to contend with regarding the lighting involved a careful scrutiny of the shadows cast by the actors as they blocked through the set. Fortunately, any double shadows cast fell far down onto the courtroom floor out of view of the camera. This was due to the expansiveness of the room and the height from which the keys illuminated the action.

Since only the subject's *movement* was cross-keyed, distracting shadows from primary but *static* areas of the actor's block did not exist. (These areas represented likely locations where facial close ups were apt to occur.) As planned, any area of the set where subjects were to remain static for any length of time was lit by a single key, carefully positioned to fulfill the illumination needs considering the variety of angles from which the subject was to be filmed.

DRESSING THE LIGHTING . . . THE SHOOT

The days of planning the lighting, rigging the set, and leveling and balancing the illumination paid off. The lighting for the documentary filming of the courtroom reenactment was unobtrusive, smooth, and realistic.

As the camera crew was readying and running through the action, the finishing touches in "dressing" the lighting took place.

To avoid streaks of sunlight from interfering with the lighting continuity of the room (as the shoot progressed from the start to the end of the day) the window shades were partially drawn. Rosco 85N3 Gel was adhered to the glass for color balance and exposure density purposes.

Actors were placed in the bleachers where spots of glare from the lights reflected off the shiny lacquered furniture. Elsewhere, glossy woodwork near the primary action areas of the set was covered with removable dulling spray to spread out any specular reflections emanating from these areas.

A cardboard box covered with wood-patterned vinyl was placed in front of the vertical polecat along which the cabling from the overhead grid ran down to the floor. A stand mounted courtroom flag added the final touches to camouflaging the lighting setup by hiding the "wood-grain" box which was already hiding the polecat.

The two-day lighting and rigging procedure culminated in a single but productive day of shooting. The film was in the can after eight hours of continuous two-camera filming. Now it was edited and ready for distribution . . . only there were nine more films to go! ■

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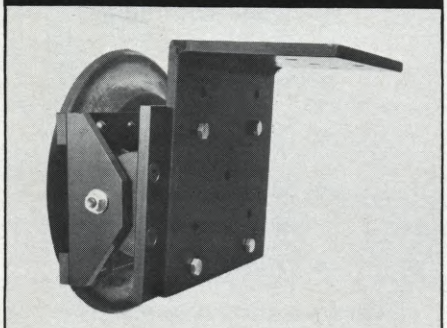

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PHOTOGRAPHING "GREASE"
Continued from Page 797

sets look like they were the real thing shot on location, sometimes cutting from one to the other with no one being able to tell the difference. I like to feel that I'm versatile enough to do either. They present different challenges and I like them for different reasons.

In shooting the car race sequence for "GREASE" we used one piece of equipment that I feel was quite unusual. It was a chase car that was very small and built very close to the ground. It looked a little bit like a dune buggy, but was even lower. The entire car was probably not even three feet off the ground, but we could work two cameras off of it—or more, for that matter.

During the course of filming the race, we were running up on the sides of a drainage canal and I don't know how many degrees of slope it was, but I kept feeling that we were going to roll off of it and turn over. The fact that this chase car was so low to the ground is what made it possible to get some quite unusual footage while going very fast on the sides of those slopes. Otherwise it would have been impossible.

Our purpose in shooting this car race sequence was not to make it the most exciting car race in the world, because it would be difficult to top the people who have done it better with a lot more equipment, but we had excellent stunt people working for us and we really had to hold them down. We had to tell them that we didn't want them to crash cars or do fantastic, impossible jumps. The objective was not to make the cars too sensational, but simply to convey the feeling of danger arising out of the competition between the two characters in the story. As a result, we had to pass on some of the spectacular ideas which the stunt people had for us (and which they could have handled very well) in the interest of pulling the race sequence down.

Even so, I feel that it's quite exciting on the screen, especially the part where the two cars run up over a drainage outlet on the side of the slope. I think that's more exciting than some of the fantastic scenes where you see cars jumping off of bridges and just barely making it to the other side. Our race ends up with their trying to jump a little stream. One guy doesn't make it at all and the other nearly breaks up. They jump off a ramp that was only about a foot high because that's the way we wanted it. We didn't want the most fantastic car antics in the world, because they would have been wrong for the story.

The major locations for "GREASE" were three actual high schools and it was

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difficult shooting on those campuses because initially classes were just letting out for summer and then we ran into summer school. We sometimes weren't able to get into the schools at the times we wanted to shoot, which caused some unpleasantness, but everything was shot in and around Los Angeles, which saved the producers a lot of money.

I mentioned earlier that one of the primary elements in the photographic style adopted for "GREASE" was the use of extensive camera movement to complement the movement of the dancers. That being the case, we put the camera on tracks a lot so that we could get it going fast. Those dancers move at incredible speeds, so the problem in trying to go with them is just overcoming the inertia of the camera. Simply getting it going is a project in itself. There were many times when the scene behind the camera was more hilarious than the antics going on in front of it, because just the number of people and ropes and grips involved in getting the camera going and trying to get it stopped added up to a real comedy sequence.

We used cranes when we were outdoors and had lots of room—for example, the huge crane used in the final carnival sequence. But we found out that a crane can be very dangerous when you've got dancers working close to it. Usually, when you work with a crane, you are far away from any action, but in this case we were using the crane to cover distance and pivot on its center point, so that as the dancers would sweep toward us, we could move away from them over the ground as if we were dollying. The big advantage would be that we wouldn't have the problem of dolly track showing.

We were using the crane in this manner, when one of the dancers who did a beautiful flip in the air during rehearsal decided on the take to do *two* flips in the air. On the second flip he flew right into the crane and got his leg caught in between one of the guide arms and the crane itself, so that he was trapped in there. We were moving and the crane was sweeping over the ground at a high rate of speed and we were certain that he was going to have a broken leg when we got him out of there. Miraculously he did not break his leg, although he hurt it, but it was evidently not too serious of an injury because he was back in there dancing the next day. He went back and did the same flip again and we got the shot.

All of the dancers who performed in "GREASE" seemed to be very athletic and able to do a lot of gymnastic things in their dancing, but there were times when just the amount of energy and physical activity going on around the camera would make it dangerous to them. To

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their credit, I must say that those dancers didn't hold back anything. Their nerve and desire to get the best possible result on film were just unbelievable. Working on a musical you gain a great respect for the dancers because of their willingness to give you the best that they possibly can. I can't quite understand that kind of energy and endurance, but certainly the dancers in "GREASE" gave everything they had—and it was wonderful to see.

I've been asked whether we used the STEADICAM or the PANAGLIDE (we were using Panavision equipment) in shooting "GREASE". There were times when we felt that we might go that route—and it seemed like a good idea—but I didn't actually find anyplace where it would fit. It would seem to work best for chases and fast runs upstairs and things like that, but for our purposes the crane seemed to work better. It gave us more control and enabled us to swing up and over the action at times. I'm sure that, used in the right place, a device like the PANAGLIDE can be exceptionally dramatic, but what I wanted was controlled movement that could be very precise, because the dances were very precise. Consequently, in order to get the best out of Pat Birch's choreography, we used dollies and cranes.

Photographing "GREASE" presented an almost endless series of challenges, but I feel that we met those challenges successfully and I'm happy with the result on the screen. ■

(ABOUT THE AUTHOR: BILL BUTLER, ASC, was nominated for an Academy Award for his photography of "ONE FLEW OVER THE CUCKOO'S NEST" (together with Haskell Wexler, ASC) in 1975. That same year he served as Director of Photography of "JAWS", which, until "STAR WARS", was the biggest grossing film of all time.

Born in Colorado, Butler began his career in films working with then-novice director William Friedkin on a series of documentaries in Chicago. One of them, "THE PEOPLE VS. PAUL CRUMP", not only won the pair the top award at the San Francisco Film Festival, it also reversed the practice of capital punishment in Chicago because of its impact. Friedkin brought Bill with him to work on his "GOOD TIMES," starring Sonny and Cher. He then worked with Jack Nicholson on "DRIVE, HE SAID", and with Francis Ford Coppola on one of his earliest features, "THE RAIN PEOPLE". Coppola called upon Butler to photograph his critically acclaimed, Academy Award-nominated "THE CONVERSATION", and then came assignments to work with Milos Forman on "CUCKOO'S NEST" and with Steven Spielberg on "JAWS".

Having started as an electronics engineer, Butler still likes to work in television where his photography for "RAID ON ENTEBBE" and "THE EXECUTION OF PRIVATE SLOVICK" has been appreciated by critics and public alike.)

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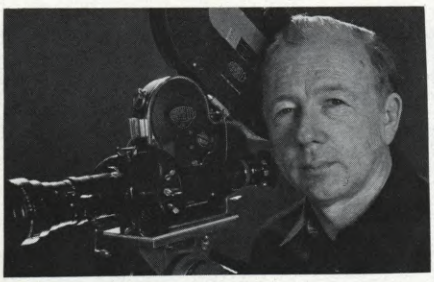

NPPA NEWS PHOTOGRAPHER OF THE YEAR AWARD RENAMED IN HONOR OF THE LATE ERNIE CRISP

As a tribute to the late Ernie Crisp, the National Press Photographers Association (NPPA) has renamed the award presented annually to the TV News Photographer of the Year.

At the time of his death, Crisp was an instructor of professional cinematography at Eastman Kodak Company's marketing education center in Rochester.

The Kodak Ernie Crisp Award was presented to Larry Hatteberg of KAKE, Wichita, Kan., on July 2 during the Television Awards Banquet at NPPA's annual Business and Education Seminar in Seattle.

Crisp, noted teacher and filmmaker, died when his biplane crashed last October.

Crisp was only 49 at the time of his death, but his career had already spanned more than 30 years. He earned more than 25 professional awards, including the NPPA News Photographer of the Year Award in 1966.

His career began as a military cameraman after World War II. By 1959, Crisp was named chief photographer for WRTV in Indianapolis. He was given many overseas assignments during this period, including coverage of the 1964 Olympic Games in Tokyo and Winston Churchill's funeral.

In 1966, he was named manager of Indianapolis' WFBM production center. He was involved in producing many highly regarded documentaries, including the official annual film of the Indianapolis 500 car race.

Crisp served as NPPA vice-president in 1968-69, and as president in 1969-70. He joined Kodak in 1970.

Among his students was Larry Hatteberg. On hand to present the award was his widow, Margaret Crisp.

Many of Ernie's former friends, associates and students have paid tribute to him. Among them have been Hatteberg.

"He was the kind of man you wanted to know," Hatteberg said. "He took the time to help people. He really cared about people, and he really cared about the television news profession."

Dave Hamer, assistant news director, KMTV, Omaha, Neb., also lauded Crisp.

"I always considered Ernie one of the best educators in the TV news business," Hamer said. "While he concentrated on newsfilm, his good advice went beyond that to that of good journalism . . . he always emphasized the basics of good reportage . . . to be accurate, honest and fair. Those who came under his influence went away better reporters and cinematographers. Consequently, the newsrooms of America are staffed with Ernie's proteges, and those newsrooms and the living rooms of America are better for the time Ernie spent amongst us."

Last year, before his death, Crisp was honored with the Robin Garland Memorial Award as NPPA Educator of the Year. Among other awards he received was the Joseph Costa Award in 1973 for "most outstanding initiative, leadership and service in advancing the goals of NPPA."

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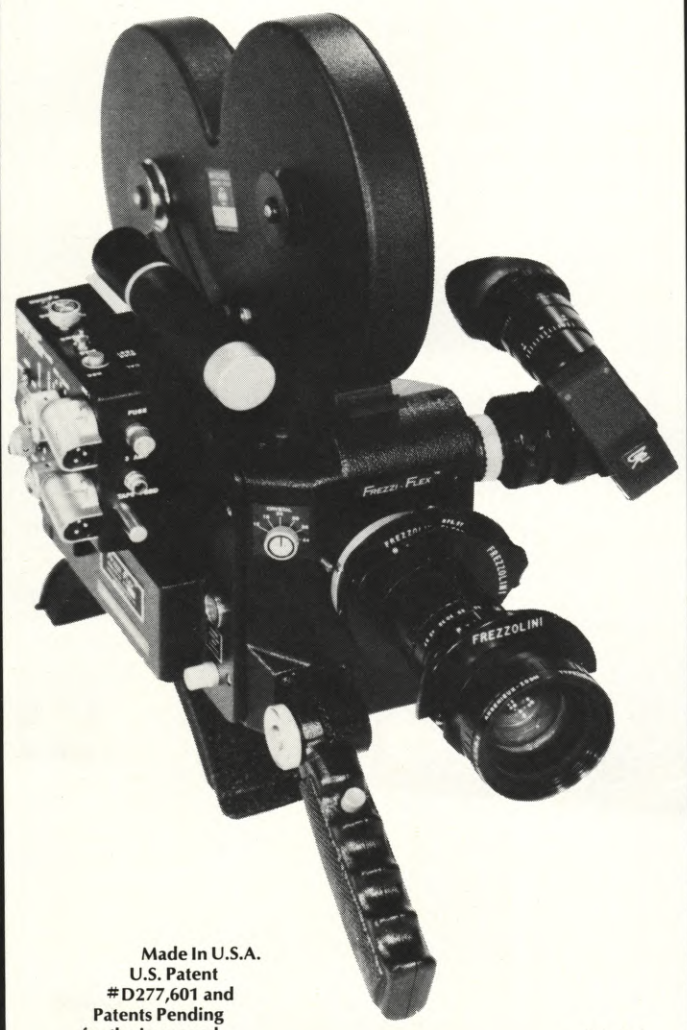

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